UNDERSTANDING POVERTY DYNAMICS USING A MIXED-METHOD STUDY: EVIDENCE FROM THE RURAL VILLAGE IN THE NORTHEAST AND CENTRAL REGIONS OF THAILAND

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A THESIS SUBMITTED FOR
THE DEGREE OF DOCTOR OF PHILOSOPHY IN
DEVELOPMENT STUDIES

UNIVERSITY OF SUSSEX

SEPTEMBER 2013

UNIVERSITY OF SUSSEX

THE DEGREE OF DOCTOR OF PHILOSOPHY IN
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SUMMARY

This study is one of the first attempts to understand the long-term mechanisms of poverty dynamics at the household level in rural villages in Thailand. It does so by identifying dynamic patterns of poverty and by examining the factors and processes that underlie poverty dynamics in two major rice production regions of Thailand, namely, Khon Kaen province in the Northeast, Thailand's poorest region, and Suphanburi province in the Central plain, one of the richest regions of the country. The study is based on a survey of a panel of 240 households that were originally interviewed in 1988, and followed and interviewed again in 2009 for the purpose of this longitudinal study. The contrast between the survey areas is deliberate and has been useful for comparing economic and social structural changes of rural households across two decades, as well as examining disparities in the opportunities and resources between the two regions.

In order to capture the complex and multidimensional nature of poverty, the study combines quantitative and qualitative methods in the analysis of poverty dynamics in Thailand. A quantitative survey analysis was merged with qualitative assessments by using the same sampling frame and then sequentially integrating life history interviews. The results show that both quantitative and qualitative approaches provide similar patterns of poverty transition. Notably, the study has found that the proportions of households moving into and out of poverty were higher than those remaining in chronic poverty, similarly to most experiences of poverty mobility in

other developing countries. In addition, the study demonstrates the benefits of using a mixed-method approach for examining the factors underlying poverty dynamics. The study argues that combining these two approaches provides a richer insight of how rural households' economic, social and demographic characteristics have been associated with poverty dynamics. A number of similar factors that influence households' poverty dynamics were identified in both quantitative and qualitative approaches. These include asset factors, demographic factors and employment factors. However, the qualitative approach has provided further insight into additional contextual factors and processes not easily identified by the quantitative approach, notably the impact of ill-health shocks and behavioural factors. Understanding the distinction between the patterns of poverty dynamics and the mechanisms explaining them is of crucial importance for policy interventions. The implications derived from this study of poverty dynamics seek to strengthen poverty reduction efforts in Thailand, as well as to derive useful lessons to other developing countries.

For

My beloved mother and grandmother

ACKNOWLEDGEMENTS

There are many people who have contributed to a completion of my Ph.D. thesis. First and foremost, I would like to express my sincerest gratitude to my main supervisor, Professor J. Allister McGregor for his continuous support, patience, motivation, and immense knowledge. He taught me how to question thoughts and express ideas on a right track. He also exposed me to learn about realities of doing research and fieldwork. His guidance and encouragement provided me a better understanding in poverty issues and the fundamental of qualitative research in particular. I still remembered my feeling on the first day that he interviewed me and finally accepted me under his supervision. He always cheered me up when I felt depressed by keep saying that I am capable enough and what I only need is a confidence. I would like to say that I gained a lot more confidence now and this is mainly because of you, Allister.

I am also deeply grateful to my second supervisor, Dr. Patricia Justino who had always been there to listen, support, and provide constructive advice particularly on the quantitative part. I appreciate all her contributions for carefully reading and commenting on countless revisions of this thesis. I still remembered that she always kept telling me to believe and be proud of my work which really builds up my vigor and enthusiasm.

Upon completion of this thesis, I would also like to thank both examiners for my Viva exam: Professor Jonathan Rigg and Professor Andy McKay for their time, interest, and insightful comments. It is my great honour to have them as my exam committee.

I would like to thank the Ph.D. convenor: Dr. Linda Waldman, for her encouragement and valuable comments, and also many fellows at IDS for numerous discussions that helped me understanding my area better. In addition, I am thankful to Angela Dowman for her administrative assistance and her willingness to help at all times.

I gratefully acknowledge my funding source that made my Ph.D. work possible. I was funded by the Royal Thai Government Scholarship. I would also like to thank

Office of the National Economic and Social Development Board, especially Dr. Porametee Vimolsiri and Dr. Pattama Tianravisitsagool, for providing me great opportunity to pursue my degree. My sincere gratitude also goes to the Thailand Research Fund in collaboration with the Knowledge Network Institute of Thailand for providing financial support for my field study and for publishing my first book.

I would like to acknowledge Associate Professor Somporn Isvilanonda for allowing me to use his data collected back in 1987-1988 as well as bringing me to meet local people in the field study areas. I would also like to extend my sincere thanks to Dr. Supattra Cherdchuchai, Dr. Orawan Butso, and Dr. Isriya Boonyasiri for their good advice during the first stage of my research.

Many friends helped comfort me during my difficult years. I am thankful especially to Dr. Suphannada Limpanonda, Dr. Thuttai Keeratipongpaiboon, Kampree Sethabutra, Wittawat Sungsakija, Anuwan Vongpichet, Dr. Karnjana Sanglimsuwan and Dr. Piyaporn Sodsriwiboon. My special thanks also go to Dr. Juan Gonzalez, my best friend at IDS, Machiko Tsubura, Dr. Teresa Armijos, Dr. Rehab Osman, Dr. Marjoke Oosterom, and all other friends in the IDS Dphil Room. Having you guys around has never made me feel too lonely while being far from home. I greatly value their friendship and appreciate their belief in me. I am also grateful to Doug Taukobong-Olsen, Aunty Plouy and Uncle Phongsak at the Unithai restaurant in Brighton for their kindness and true friendship.

Most importantly, none of this would have been possible without love of my family. My mother and grandma to whom this dissertation is dedicated to, has been a constant source of love, support and strength all these years. I would like to express my heartfelt gratitude to my mother who endlessly gives me unconditional love and supports throughout this endeavour and always. Thank you for taking good care of me. You are the best mom in the world. I am also thankful to Dr. Nipit Wongpunya for his love, encouragement and companionship. Thanks for always being there for me. I love laughing and crying with you really.

Finally, I am indebted to all local people whom I got to meet and interview with. They not only shared me their time and information for my research, but they also gave me priceless friendship as well as great inspiration to learn more about lives and poverty.

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LIST OF ABBREVIATIONS

CPRC	Chronic Poverty Research Centre
CDFs	Cumulative Distribution Functions
DFID	Department for International Development
EWQ	Economic Welfare Question
ERHS	Ethiopia Rural Household Survey
FGT	Foster-Greer-Thorbecke class
GDP	Gross Domestic Product
IFAD	International Fund for Agricultural Development
IRRI	International Rice Research Institute
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
KIDS	KwaZulu-Natal Income Dynamics Studies
MDGs	Millennium Development Goals
MOAC	Ministry of Agriculture and Cooperatives
MV	Modern rice Varieties
NESDB	National Economic and Social Development Board
NESDP	National Economic and Social Development Plan
NPF	National Pension Fund
NRDC	National Rural Development Committee
NSO	National Statistical Office
OAE	Office of Agricultural Economics
OSMEP	Office of Small and Medium Enterprises Promotion
PPA	Participatory Poverty Assessment
PPP	Purchasing Power Parity
PRA	Participatory Rural Appraisal
SES	Socio-Economic Survey
SOP	Stage-of-Progress method
TDRI	Thailand Development Research Institute
UNDP	United Nations Development Programme
UNHS	Uganda National Household Survey

CHAPTER 1
Introduction

1.1 Introduction

Thailand is known to be one of the most successful developing countries in the world in terms of poverty reduction. It has achieved a remarkably high rate of economic growth accompanied by a steep reduction in the incidence of poverty, particularly between 1980 and 1990 (United Nations, 2003). Thailand moved from being one of the world's poorest countries with a zero growth rate in the 1950s to become one of the fastest growing economies in the world with an approximate growth rate of 8 percent between 1960 and 1996. This extraordinary economic growth has transformed Thailand from a low-to a middle-income country and from an agricultural-based to an industrial-based economy (Warr, 1993). It has helped to increase the income level of the average Thai household, which has led to a significant reduction of poverty. Several research works have demonstrated that growth is regarded as being an important factor of this accomplishment (see Kakwani et al., 2004; Jitsuchon, 2006).

Most studies on poverty in Thailand generally discuss poverty profiles to analyse the general characteristics of people who are considered to be poor, and compare the incidence of poverty across time and population groups. Although much progress has been made, these previous poverty studies are not sufficient to explain the dynamic process of poverty, i.e. why some households are able to move out of poverty, while others move into or remain in poverty over time. There may appear to be a remarkable reduction in the overall incidence of poverty, but this does not mean that everyone's lives have improved. Behind the aggregate numbers, some households benefit from growth and are able to move out of poverty, while some may not succeed and further descend into poverty. "*One could find that many people have escaped from poverty while many others have fallen into poverty*" (Ravillion, 2001).

Reducing poverty more effectively requires context-specific knowledge about the reasons for moving into and out of poverty. Since each type of poverty is likely to require a different policy response, there is a increasing demand to better understand the causes and processes of poverty dynamics as a further step in designing more effective policy interventions (McCulloch and Baulch, 2000). Poverty reduction policies not only have to focus on the existing poor, but also help non-poor households that may become vulnerable and enter into poverty at some period of time. Thus, it is essential to collect micro-level evidence to better understand the nature of causalities and ascertain why some people manage to move out of poverty, while others remain in poverty or move into it over time.

In an attempt to close this gap in poverty knowledge, this study seeks to understand the long-term mechanisms of poverty dynamics at the household level in rural villages in Thailand. It does so by identifying the dynamic patterns of poverty and examining the factors and processes underlying poverty dynamics in two major rice production regions of Thailand, namely, Khon Kaen province in the Northeast, Thailand's poorest region, and Suphanburi province in the Central plain, one of the richest regions of the country. The study is based on a survey of a two-wave panel data of 240 households that were originally interviewed in 1988, and followed and interviewed again in 2009 for the purpose of this longitudinal study. The contrast between the surveyed areas is deliberate and has been useful for comparing the economic and social structural changes of rural households across two decades, as well as examining the disparities in the opportunities and resources of the two regions. The key factors specifically explored in the study include households' characteristics and asset holdings.

In addition, the study attempts to explore the dynamics of poverty by utilising the benefits of multidisciplinary approach in which quantitative analyses were integrated with qualitative research methods. In this study, a quantitative survey is combined with a qualitative assessment using the same sampling frame and then sequentially integrating life history interviews. The quantitative survey approach can contribute to poverty dynamics research by identifying and understanding the correlation of the characteristics of households in each pattern of poverty dynamics, while the qualitative

approach can elaborate the processes underpinning the correlation and also lead to more nuanced contextual details that reflect people's own understanding of their experiences. Therefore, lessons learnt from this comparative mixed-method study of poverty dynamics in rural Thailand are expected to provide a better insight, as well as a contextual understanding, of how rural households' patterns of main economic, social and demographic characteristics have evolved over time. This particularly relates to those features associated with changing households' well-being, and how those changes relate to the creation and reduction of poverty. The implications derived from this study of poverty dynamics seek to strengthen the poverty reduction efforts in Thailand, as well as provide useful lessons for other developing countries.

1.2 Rationale of the study

This study is driven by two key rationales, one of which is the recognition of the importance of the dynamic nature of poverty, as well as the multi-dimensions of poverty that lead to combination of quantitative and qualitative methodological approaches. The second is the explicit empirical analysis in the case of Thailand, which has been one of the most successful developing countries in reducing poverty levels.

1.2.1 Significance of poverty dynamics

Poverty reduction is a central part of the development goal and has still remained a major challenge for community development. It has been listed as being an overarching objective for countries' development plans since 1990, especially developing countries, and many key international agencies have brought it back into the arena of development in the form of the new poverty agenda[1] (Lipton and Maxwell, 1992). Policy-makers and development practitioners throughout the world have made several attempts to overcome the problem of poverty, and there is an increasing interest in understanding the exact nature of poverty and why it occurs in order to effectively support poverty reduction policies. Extensive research from diverse fields of academic

[1] The so-called 'new poverty agenda' covers three-pronged anti-poverty reduction strategies, including labour-intensive growth, greater access to social services, and the effective provision of social safety nets. The new approach also emphasises a broader notion of poverty, moving beyond income/consumption toward a more comprehensive concept of a sustainable livelihood (Lipton and Maxwell, 1992).

disciplines, particularly from social sciences and development-related studies, including sociology, economics, anthropology and political science, has also contributed to poverty analyses, both in terms of conceptual and methodological advances. Despite making considerable steps forward in terms of both the concept and measurement of poverty, a number of issues regarding poverty research still remain unresolved and in need of further clarification.

To help deepen our understanding in the nature and process of poverty, and thus, improve the efficacy of poverty reduction policies, comprehensive poverty studies should include three key facets, namely, (i) *the metric dimension* or aspects by which poverty is assessed. There is a growing consensus that poverty should be examined by more multidimensional concepts and measures than merely income or consumption. (ii) *the temporal dimension or dynamics of poverty*. Since it is widely recognised that static analyses of poverty have their limitations, poverty research needs to move from static analyses to focus on poverty dynamics that track the same individuals or households over a period of time. (iii) *the methods used* for poverty analysis. With increasing attention being paid to the dynamic process of poverty, there is also a need to adopt cross-disciplinary methods when researching poverty. This particularly includes a mixed-methods approach or a combination of two approaches, i.e. qualitative and quantitative (Baulch and Hoddinott, 2000, Clark and Hulme, 2005, Addison et al., 2009).

Over past decades, advances have been made in conceptualising, measuring and analysing poverty, particularly in terms of breadth or multidimensionality (Anand and Sen, 1997, Atkinson, 2003, Alkire and Foster, 2007). However, relatively limited progress has been made in investigating the temporal dimension or dynamics of poverty. Narayan and Petesch (2007) recognise the need for further research on poverty dynamics, with a particular focus on identifying factors and processes of poverty mobility, as well as poverty persistence, emphasising that '*the factors that interact to get people out of poverty or keep them stuck there remain in a black box*'.

Numerous studies of poverty analysis in both developed and developing countries have long been static which is based on cross-sectional data. Conventional static analysis literature mainly focuses on the poverty incidence ratio indicating the proportion of the population that has fallen below a given income or expenditure threshold at a particular point in time and compares poverty trends at different times. However, static studies cannot provide a complete picture of poverty dynamics; for example, whether those people or households that were poor in previous years are the same this year, or whether new households or individuals have fallen into poverty, nor can they reveal how long those people remain in poverty. Baulch and Hoddinott (2000) argue that a static poverty analysis can result in identification errors in terms of both inclusion and exclusion. They explain that using static data can result in the inclusion within the target group of households that happen to have become temporarily poor in that particular year, but are not considered to be poor based on their permanent income or consumption. On the contrary, some households regarded as poor based on their permanent incomes may be excluded from the target group as a result of short-term favourable circumstances. In his review of poverty dynamics in developing countries, Yaqub (2000) also states "*whether the poverty trend is up or down says nothing direct about the dynamics of whether those people or households that were poor before, remain poor now. Only poverty dynamics directly captures the economic mobility of households or individuals, by attempting to measure their well-being at different points in time"*.

Most studies of poverty dynamics relate to developed countries due to the availability of longitudinal data, while only a few studies have traced income growth and changes in poverty in developing countries over an extended period of time due to the lack of a suitable panel data set. There has little growth in the number of works examining poverty dynamics in developing countries since the year 2000, while most developing countries still have no available panel data, particularly the nationally representative ones (Addison et al., 2009). In cases where panel datasets exist, they mainly consist of short waves and small samples (Baulch and Hoddinott, 2000, Yaqub, 2000). On the qualitative side, there are also a relatively few number of village restudies especially in the South East Asian countries (Rigg and Vandergeest, 2012). Not only is

an analysis of poverty dynamics in a survey-income or expenditure-based discipline required, but a comprehensive understanding of poverty dynamics from broader multidimensional and multidisciplinary perspectives is also essential. In their recent book, Addison et al. (2009) emphasise the necessity of a new poverty research frontier that moves toward dynamics analyses in multidimensional concepts and adopts cross-disciplinary approaches to poverty dynamics using the strengths of both quantitative and qualitative approaches.

It is especially essential to understand both the patterns and key factors that underlie poverty dynamics, i.e. why some households stay poor while others escape from poverty over a period of time, to help to raise profound implications for appropriate policies, as well as to target anti-poverty policies at particularly poor groups. One of the overarching implications is the need for policies to target different types of poverty dynamics. The appropriate policy responses may differ, depending on different types of poverty dynamics in the target population. Policies for people whose poverty is transitory should be distinguished from those for people faced with chronic or persistent poverty (McCulloch and Baulch, 2000, Barrett, 2005a, Krishna, 2010a).

1.2.2 Context of Thailand

(1) Successful in terms of reducing income poverty but faced with worsening income inequality

Some of the best prospects for economic growth and poverty reduction in the last few decades have been found in East and Southeast Asia, and Thailand stands out among the high-performing East and Southeast Asian countries as one of the fastest growing economies in the region in terms of the extent and rate of economic growth, as well as the annual GDP per capita generated over the past four decades. The average annual growth rate of the country's Gross Domestic Product in real term (real GDP) between 1960 and 2009 was a respectable 6.4 percent. Prior to the economic crisis of 1997, the economy grew by an average rate of about 8 percent per annum between 1960 and 1996, and it made a fully-fledged recovery after the economic crisis with an average rate of 4 percent between 2000 and 2009 (see Figure 1.1). The remarkable economic

performance was mainly attributable to high export growth following favourable external conditions, as well as sound macroeconomic policies.

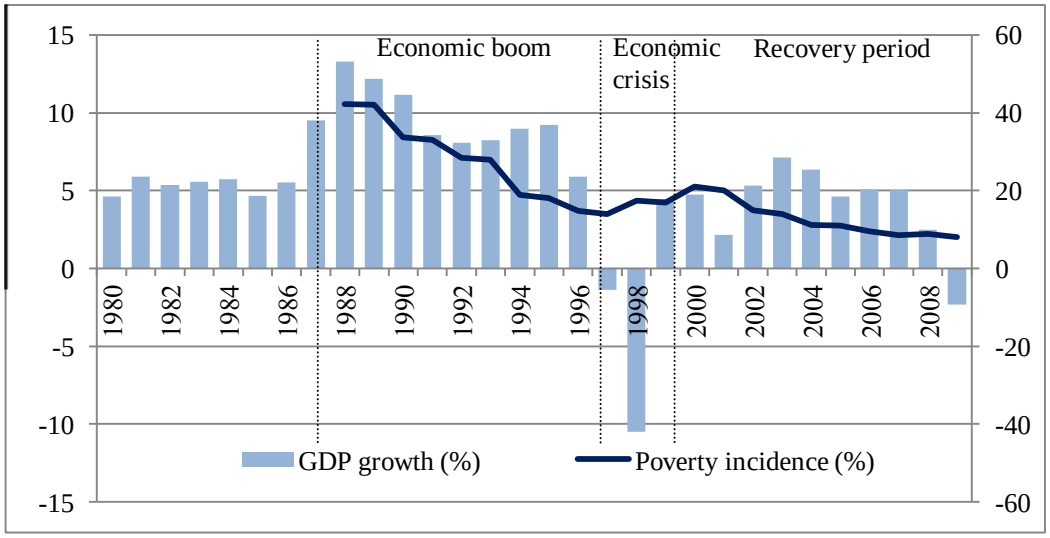
The annual per capita GDP of the Thai population increased sharply from 3,000 Baht[2], below that of several Sub-Saharan African countries in 1961, when the first National Economic and Social Development Plan (NESDP) was initiated, to reach an average level of 45,000 Baht with double digits growth by the late 1980s. Evidence suggests that Thailand experienced extraordinary double-digit growth rates or a so-called economic boom during the late 1980s until 1996, the pre-crisis period (Warr, 2005). The growth rate of Thailand's real GDP between 1988 and 1996 averaged 10 percent per annum, which led to it being considered as one of the fastest growing economies in the world and regarded as one of the East Asian miracle countries (World Bank, 1993).

The growth of per capita income later moderated after the Thai economy was hit by the crisis in 1997, but it still remained high at an average annual rate of about 6 percent between 2000 and 2009, when Thailand's per capita GDP reached 135,000 Baht (NESDB, 2009b). Significance increases were also achieved in household income in all regions as a result of the rapid rates of economic growth. Average monthly household income increased favourably from 8,000 Baht in 1988 to about 12,000 Baht in 2000. Household income stood at 20,903 Baht per month in 2009[3] (NSO, 2010).

[2] During the 1960s, the exchange rate was fixed at 20.8 Baht/US$, and 25.5 Baht/US$ during the 1980s. The Baht depreciated to 40 Baht/US$ in 2000 after adopting a managed floating exchange rate system, and remained at 34.3 Baht/US$ in 2009.

[3] The average monthly household income per capita also grew with double digit growth and tripled from 1,000 Baht in 1988 to 3,000 Baht in 1996 and up to 7,149 Baht per capita per month in 2009. The data of household income was obtained from Socio-Economic Survey (SES) conducted by the National Statistics Office (NSO). The first SES was undertaken in 1957, but it was only in 1988 that the survey began to be carried out every two years with a sample size of approximately 25,000 households.

Figure 1.1: Thailand's real GDP growth rate and poverty incidence rate, 1980-2009



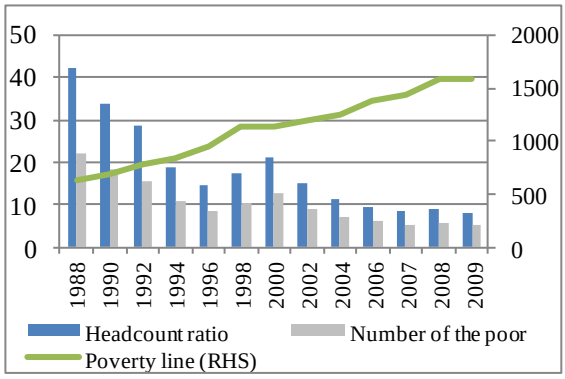
Source: NESDB

Note: Adapted from Figure 2 in Rigg and Salamance (2009)

Not only has it achieved an impressively high growth of per capita income, Thailand also possesses a successful record in terms of poverty reduction. Figure 1.2 shows that the percentage of the population with per capita income below the poverty line declined drastically from more than 40 percent in 1988 to 8 percent in 2009, with the number of poor people declining rapidly from as many as 22 million to 5 million over the past twenty years period (NESDB, 2011) (See details in Table 1.1). An international comparison also confirmed Thailand's successful poverty reduction. As shown in Figure 1.3, compared to other South East Asian countries, Thailand experienced the most rapid decline in poverty incidence based on the notion of a 2 dollar-a-day PPP poverty line, particularly during the 1990s, and reached the second lowest poverty incidence rate among all countries within the region apart from Malaysia[4].

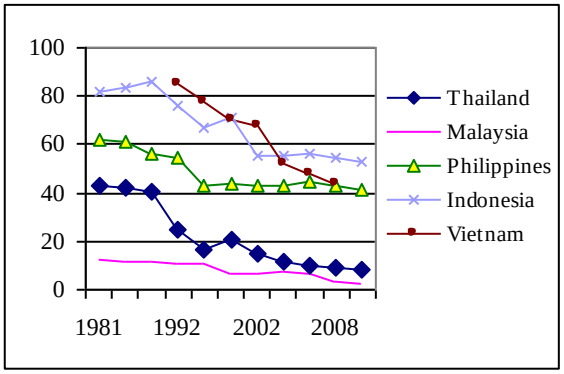
[4] Countries include Malaysia, Philippines, Indonesia and Vietnam.

Figure 1.2: Thailand's poverty situation
Poverty headcount ratio, poverty line and number of the poor, 1988-2009



Source: NESDB

Figure 1.3: Poverty headcount ratio of East Asian countries,
2 dollars a day (PPP), 1981-2009



Source: World Bank

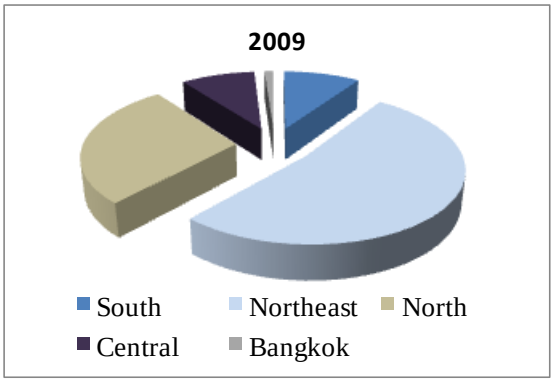
Table 1.1: Thailand's poverty indicators, 1988-2009

	Poverty line (Baht/Month)	No. Poor (Million)	Headcount (%)	Poverty gap (%)	Severity of poverty (%)	Gini Index
1988	633	22.1	42.2	11.4	4.30	0.487
1992	790	15.8	28.4	6.6	2.23	0.536
1996	953	8.5	14.8	2.9	0.85	0.513
2000	1,135	12.6	21.0	4.2	1.30	0.522
2004	1,242	7.0	11.2	2.0	0.56	0.493
2007	1,443	5.4	8.5	1.5	0.41	0.497
2008	1,579	5.8	9.0	1.5	0.40	-
2009	1,586	5.3	8.1	1.4	0.36	0.485

Source: NESDB

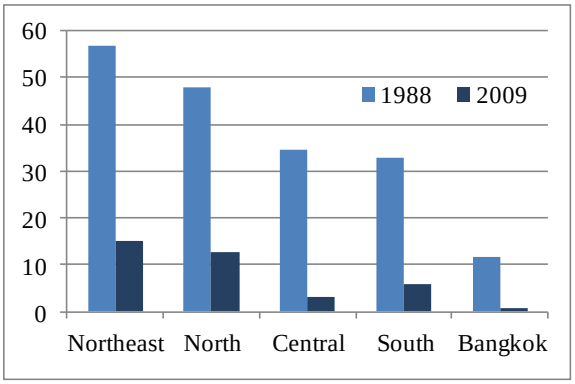
Although Thailand experienced an impressively high economic growth and successful income poverty reduction, this reduction was not uniform across the whole country (World Bank, 1996, Warr, 2004). Rural poverty still remains a significant problem in all regions. About 90 percent of the poor reside in rural areas. Classified by regions, the poor are mainly concentrated in the Northeast, but are least found in the Central region. Thus, the Northeast region is known as the poorest region, while the Central region is regarded as being the richest region of the country. As shown in Figure 1.4, more than half of the total poor resided in rural areas of the Northeast in 2009, while only 6 percent of them were found to inhabit the rural Central plain. In terms of progress in poverty reduction, the Northeast experienced the most rapid reduction of poverty compared to other regions during the past 20 years. Nevertheless, the poverty incidence rate remained highest in the rural Northeast region, at around 15 percent, while the poverty rate in the rural Central region was lowest at only 3 percent in 2009 (NESDB, 2011) (See Figure 1.5). While the poverty incidence in the Northeast region remained higher than in the rest of the country, the average household income in this region lagged further behind the average country level. This trend suggests a regional disparity in terms of the poverty reduction performance between both regions, which makes them particularly suitable areas for the field study of this research. It will be interesting to investigate how these two regions became so different in terms of poverty reduction, as well as income inequality.

Figure 1.4: Proportion of the rural poor by regions (% of total poor), 2009



Source: NESDB

Figure 1.5: Headcount ratio of rural poor by regions (% of total population), 1988 and 2009



Source: NESDB

Many indicators also show that income distribution in Thailand has worsened over time. The income inequality in Thailand is relatively striking compared to other neighbouring countries with similar economies. As shown earlier in Table 1.1, the gini coefficient index increased steadily from an average 0.45 during the 1980s (Siriprachai, 2009) to 0.48 in 2009. In addition, most figures support the fact that the unevenness of income distribution in Thailand has not only increased across regions, but also within regions, especially in the Northeast area (World Bank, 2001a, Santisart, 2000). Rising income inequality means that economic opportunities are unlikely to be proportionately distributed throughout the country, especially for the poorest household groups in rural areas, and this is less likely to lead to poverty reduction (Booth, 2003). As a result, not only will poor households be unable to move out of poverty, but some non-poor households may also become more vulnerable and risk being driven into poverty. Therefore, it is essential to better understand the creation and reduction of poverty or the dynamic nature of poverty that enables some households to move out of poverty, while some move into poverty.

(2) Structural transformation still under way

Over the past two decades, Thailand has undergone the process of structural transformation from a low-income and predominantly agricultural-based economy to a middle-income and industrial-based economy, and its high economic expansion has increasingly been accompanied by industrialisation, urbanisation and the accumulation of physical capital. However, the agricultural sector has made a progressively smaller contribution to the economy and transformed at a much slower pace. This has been partly due to the exhaustion of land resources and losses in terms of the trade of agricultural products (Siamwalla, 1991). The role of the agricultural sector has steadily declined from contributing an average 30 percent to GDP during the 1960s to 18 percent during the 1980s, and only 9 percent in 2009. On the other hand, the manufacturing sector currently accounts for almost 40 percent of Thailand's GDP. The agricultural sector's smaller contribution to overall production is also presented in terms of the very small farm households' income. In 2009, the average income of households engaged in

agricultural activities was only around 4,000 Baht per month per person compared to 6,240 Baht of all households (NESDB, 2011).

Nevertheless, in terms of livelihood and residency, Thailand still remains a strongly rural agricultural society (Dixon, 1999). Despite contributing less than 10 percent to the overall economy, the agriculture remains the predominant sector in terms of employment share of people especially in rural areas. The majority of the country's population, particularly those who are considered to be income poor, still reside in rural areas[5] where 30 percent of the total rural population are engaged in the agricultural sector. In addition, about 40 percent of all the areas in the country are agricultural plantation areas[6] and half of the agricultural lands are solely allocated to rice farming. Therefore, since it accounts for the majority of the population and plentiful available land resources, the agricultural sector is still considered to be the mainstay of Thai people, especially those in rural areas.

Although most of the population work in the agricultural sector and it has become the most important sector for employment in Thailand, farming has remained the poorest paid occupation. Poverty pervades the agricultural sector, in that around 50 percent of the rural poor include land owned farmers and farm workers who are occupied in agricultural-related activities. In fact, 15 percent of all those engaged as farmers and farm workers are considered to be poor.

For rural Thai households, agriculture is more than simply a way of generating income from farm products; it serves as an important way of life, especially for people in rural society (Phongphit and Hewison, 1990). However, following the structural transformation of the Thai economy, several qualitative studies have suggested that industrialisation has engendered economic and social changes, as well as having a dynamic impact on the way of life of peasant households in rural village communities. The findings from these longitudinal village studies reveal that peasant households in the rural area of Thailand have diversified their livelihood strategies from subsistence-

[5] In 2009, about 70 percent of the entire population were found to live in rural areas and 89 percent of the poor were considered to be rural poor.

[6] Currently, the average agricultural land size is 22 Rais per households (Data obtained from Office of Forestry, Ministry of Natural Resources and Environment, 2010). Note that 2.5 rais equal 1 acre and 6.25 rais equal 1 hectare.

based agricultural production to participate more in non-agricultural and business-orientated activities (Nartsupha, 1999, Thongyoo, 2003, Rigg and Salamanca, 2009). These findings are also consistent with quantitative survey studies that find that there has been a significant shift in income sources of farm households from farm to non-rice and non-farm activities. (Isvilanonda et al., 2000, Cherdchuchai et al., 2008). The findings in Thailand are similar to the patterns of rural households in other developing countries that have designed their own livelihood strategies[7] and learned to diversify into multiple economic activities in order to escape poverty, as well as improve their well-being (World Bank, 2008). Rural poverty and household livelihoods in developing countries, particularly Southeast Asian countries, have increasingly shifted away from farming and the land and become more involved in non-farm activities (Rigg, 2006).

Yet, knowledge of the nature and process of rural poverty dynamics during the economic transformation of Thailand remains limited, due in large part to a paucity of panel data and lack of extensive empirical research. It is apparent that there have been significant structural changes in the Thailand, particularly over the past two decades. Therefore, it is interesting to further investigate how the structural transformation, as well as the shift in rural households' livelihood, has constructed the poverty dynamics. Studies of the dynamic process of poverty focusing especially on farm households in rural areas, as the majority of the Thai poor would provide greater insights into the long-term changes of poverty and the mechanisms that significantly contribute to the persistence of poverty and poverty transitions.

(3) Limited panel studies of poverty dynamics in Thailand

One of the key rationales of this study is the paucity of panel data for studying the poverty dynamics in Thailand. While poverty dynamics have been studied in many developing countries with the increasing availability of additional panel data, there is limited literature on poverty dynamics in Thailand, which is partly due to the paucity of

[7] According to the World Development Report 2008, livelihood strategies can be broadly divided into five categories; (i) Market-orientated smallholders (ii) Subsistence-orientated farmers (iii) Labour-orientated households (non-farm wage and self-employment) (iv) Migration-orientated households (v) Diversified households (combined income from farming, non-farm labour and migration).

appropriate longitudinal or panel data. Numerous studies of Thailand's poverty generally discuss the overall nature or patterns and trends of poverty based on poverty profiles and descriptive analyses of cross-sectional data at the national level (see for example World Bank, 1996, World Bank, 2001a, Deolalikar, 2002b, NESDB, 2011). Poverty profiles can provide a good overview in terms of identifying the poor are and their characteristics, but they are insufficiently informative to explain why they escape from poverty or become even poorer over time. In addition, most research into poverty in Thailand only demonstrates the relationship between economic growth and poverty reduction by examining how the pattern of growth the country has experienced has translated into the reduction of poverty and income distribution (Krongkaew, 1985, Krongkaew, 1993, Jitsuchon, 2006, NESDB, 2008). Only a few studies have gone further to investigate the determinants of poverty in Thailand using cross-sectional data from Socio-Economic Survey[8] obtained from National Statistical Office (see for example Deolalikar, 2002a).

There are only comparatively few panel studies which trace the same households over time. As far as I know, there only three panel survey studies have been undertaken of Thailand, one of which was a dataset produced by Professor Robert Townsend under a project administered in collaboration with the National Opinion Research Center and the University of Chicago in the United States. The study aimed to track the impact of the crisis on households and businesses by focusing on informal and formal financial institutions and markets. The survey included 880 sampled households in four provinces, Lopburi and Chachoengsao in the Central region and Buriram and Sisaket in the Northeast region of Thailand. All the sample households were interviewed annually since 1997 (see Paulson and Townsend, 2001). The second study was undertaken in 1982 and 1994 in two villages in Mahasarakham province in the Northeast of Thailand by Professor Jonathan Rigg from University of Durham, United Kingdom. 77 households were sampled. The main purpose of this study was to examine the characteristics of the poor and the non-poor and the progress of the poverty situation (see Rigg, 1998). The third study was undertaken in 1988 by Assistant Professor

[8] The National Statistical Office (NSO) conducted Thailand's Socio-Economic Survey (SES) every two years from 1988-2007. The survey then has been done every year since 2008 onwards.

Somporn Isvilanonda from Kasetsart University in Thailand, and was sponsored by the International Rice Research Institute (IRRI). The main purpose of this survey was to study the impact of the adoption of modern rice technologies on farm households' income by comparing different production environments in favourable and unfavourable areas (see Isvilanonda and Wattanutchariya, 1994). Due to availability and permission to use the data, this research is based on the third panel dataset.

None of these few panel studies mainly focus on factors associated with poverty dynamics. Therefore, this study is one of the first attempts to provide an in-depth analysis of poverty dynamics in Thailand at the household level. The study expects to shed light on some key issues, especially the long-term mechanism and dynamic process of poverty, as well as provide a better understanding of how such a successful developing country like Thailand can experience a reduction in poverty and also observe other possible patterns of poverty dynamics that have been produced over the past twenty years.

(4) Poverty alleviation policies in Thailand

In order to obtain a better understanding of poverty reduction in Thailand, it is important to start by reviewing the background information of some of the key poverty alleviation policies implemented over the past decades.

The poverty reduction agenda has played a central role in Thailand's development goal. The initiatives of Thailand's poverty alleviation policies can be traced back to over four decades ago when the five-year National Economic and Social Development Plans (NESDP)[9] were established. The NESDP was a framework for national development that provided broad guidelines for other government agencies to translate into their implementation plans. The first four plans (1961-1981)[10] were based

[9] The National Economic and Social Development Plans (NESDP) were prepared by Office of the National Economic and Social Development Board (NESDB) established in 1959 as the key central planning agency of Thailand under the Prime Minister's Office. Based on their consistency with the NESDP, the Bureau of Budget allocates the government budget to all development projects. The NESDB also guides state-owned enterprises' investment budget and requests to government agencies for foreign loans through the policy guidelines stated in the National Plans.

[10] The First Plan (1961-1966), the Second Plan (1967-1971), the Third Plan (1972-1976) and the Fourth Plan (1977-1981).

on a top-down planning process and basically focused on development with export-orientated economic growth and public infrastructure investment. Priority was also given to the urban development in each region following the assumption of trickle-down development effects on the rural and local areas (Parnwell and Arghiros, 1996).

Poverty alleviation was explicitly included in the national development plan for the first time in the Fifth Plan (1982-1986). Due to the economic turbulence, such as the oil crisis and the current account deficit, the Fifth Plan was the period of structural adjustment, and the planning approach shifted from being project-orientated to programme- and area-based. The plan prioritised regional development with a particular focus on the reduction of poverty (NESDB, 1982). At the beginning of the Fifth Plan, the government announced its first clear policy on rural development and established a systematic administrative organisation. The policy expanded the scope of poverty reduction by mainly focusing on regions affected by poverty, which at that time covered the rural areas of 288 districts in 38 provinces. The National Rural Development Committee (NRDC) was established to oversee the formation and implementation of the poverty alleviation programme, and a key factor on the agenda was the rural job creation programme administered by the Office of the Prime Minister from 1980 to 1992. The main objective of this programme was to generate employment for rural villagers during the slack agricultural season by implementing labour-intensive construction projects of basic infrastructure, such as water supply, irrigation facilities and roads. After the Fifth Plan, the priority for development in the Sixth Plan (1987-1991) remained the reduction of poverty and the development of rural areas.

Poverty reduction was incorporated into the Seventh Plan (1992-1996), with a greater focus on income distribution and human resource development (NEDSB, 1992). This plan involved the implementation of many new projects with an emphasis on the development of rural areas. The rural job creation programme was replaced by the Tambon[11] Development Programme in 1992. This project not only included public infrastructure construction activities to generate rural employment, but also covered career development, environmental conservation, and rural institution linkage

[11] Tambon (in Thai) is an administrative unit at a sub-district level.

development (TDRI, 2011). In addition, one more in-kind transfer programme called the school lunch programme was implemented in 1992 by the Ministry of Education. This programme provided free lunch for poor students[12] in all primary schools that provided compulsory primary education. In 1993 the government approved the budget for the first and most significant nationwide programme called the Poverty Alleviation Project, which was administered by the Community Development Department under the Ministry of the Interior. The key objective of this project was to provide interest-free loans to poor households[13] to be used for investment in income-generating activities. Additionally, there were also three important cash-transfer programmes to the poor[14] administered by the Department of Public Welfare under the Ministry of Labour and Social Welfare. These three programmes continued to be implemented throughout the Eighth Plan (1997-2001).

Following the development guidelines in the Eighth Plan, Thailand shifted the development paradigm from emphasising economic growth to people-centred development. The planning process was also based on a bottom-up approach by encouraging people from every sector in society to participate in the country's planning process. The implementation and monitoring of the Plan were also designed so that people could participate. It was hoped that involving local people in the development process would ensure that the benefits of development would reach the most disadvantaged segment of society and generate more equitable development (NESDB, 1997).

Although a number of poverty alleviation programmes could be observed in the National Plans, they remained relatively less important than other macroeconomic growth and economic development policies. Poverty alleviation did not become the key

[12] The criteria for selecting the students eligible for a free lunch included family income, location, and whether or not they were underweight.

[13] An amount of 280,000 Baht was given to each village under the Poverty Alleviation Project. Households with an income of less than 5,000 Baht per person per year could borrow from this fund without paying any interest. During the whole project implementation period (1993-2001), almost 30,000 villages joined the project and around 1.5 million poor households obtained loans.

[14] These programmes included the provision of direct cash assistance to poor families consisting of 200 Baht monthly allowance to the elderly or disabled poor, and 12,500 Baht village community funds to assist poor households in the village in case of emergencies, such as crop failure or death of the head of the household. The programmes were designed so that the village welfare committee could identify who should receive the money, as well as decide what it would be used for.

agenda in National Plans and government policies until the financial crisis hit Thailand in 1997, when the poverty rate reversed its decline and began to increase more than the pre-crisis level for an extended period of time[15]. Following the Millennium Summit of the United Nations in 2000, the Thai government, along with 192 other countries around the world, became committed to the Millennium Development Goals (MDGs), the primary aim of which was to eradicate extreme poverty and hunger by 2015 (half the percentage of people living on less than 1 US dollar a day).

Poverty alleviation received greater attention and became a key objective in national development policies in the Ninth Plan (2002-2006)[16] and the Tenth Plan (2007-2011)[17]. People-centered development still remained the key paradigm following the Eighth Plan. These two plans also adopted a Sufficiency Economy Philosophy as the guiding principle of national development and management. Therefore, Thailand's long-term development vision focused on balancing the development of various aspects, including economic, social and environmental, in order to achieve the 'sustainable development and well-being of all Thais', as indicated in the development vision of the Ninth Plan (NESDB, 2002) and to achieve a 'green and happy society' in the Tenth Plan (NESDB, 2007). After reviewing the key dimensions of social, economic and environmental change, Thailand recognised the importance of people-centred development as the aim of development efforts by placing the economy as a tool to help people to achieve greater happiness and a better quality of life. Therefore, the poverty reduction strategy under these two plans aimed to cover poverty in a broader sense. It not only focused on increasing people's income, but also included other aspects of poverty that affected people's standard of living and human development, such as expanding the provision of social welfare to all elderly people and increasing the access to twelve-year basic education.

[15] The poverty incidence rate stood at 17 percent in 1988 and 21 percent in the year 2000, up from the pre-crisis level of 15 percent in 1996.
[16] The key target of the Ninth Plan was to reduce the poverty rate to less than 12 percent by 2006. This target was achieved since the poverty incidence was 9.5 percent in 2006.
[17] The Tenth Plan aimed to achieve a target of less than 4 percent poverty by 2011, while the poverty incidence was 8.1 in 2009.

There is no doubt that Thailand has achieved remarkable economic growth and has an impressive record of poverty reduction, especially over the past two decades, due in part, to the strong commitment of the Thai government to reduce the level of poverty incidence. However, poverty still remains a key challenge for Thailand's development process. A number of poor and vulnerable people, particularly those in rural areas, still have not fully benefited from the trickle-down effects of the economic growth. In addition, as described earlier, due to a limited amount of panel data, the design and formation process of Thailand's poverty reduction policies over the past decades have generally been based on poverty profiles using cross-sectional data, which is insufficient to explain the dynamic process of poverty. It is likely that policy efforts to reduce poverty only aimed to reduce the number of the existing poor, mainly by enhancing income growth. However, these policies did not focus on preventing the non-poor, who could become vulnerable to some negative shocks, from becoming the new poor later.

A more effective reduction of poverty requires context-specific knowledge about the reasons people move both into and out of poverty. Poverty reduction policies need not only focus on the existing poor, but also help non-poor households that may become vulnerable and enter into poverty at some period of time. Thus, it is necessary to provide micro-level evidence to better understand the nature of the causalities and the process of why some people can manage to move out of poverty, while others still remain or move into poverty over time. It is expected that the lessons learnt about the mechanism underlying the dynamics of poverty in Thailand in this study will contribute to a deeper understanding of poverty processes, as well as help to design more effectively-targeted poverty alleviation policies in the future.

In addition, the ultimate goal of the current pace of development for Thailand stated in the Eleventh Plan (2012-2016) has continued to move toward people-centred and balanced development rather than focusing exclusively on economic growth measured by the increase in the level of income (NESDB, 2012). Therefore, there is a need to make an effort to analyse poverty dynamics beyond monetary measures to broader dimensions that can reflect the complex nature and reality of poverty. Poverty needs to be to be viewed in multi-dimensional aspects, not only in terms of lack of income based on a conventional poverty line threshold. This also includes the perception

of local people, who directly experience poverty themselves. This empirical study in the dynamics of poverty using complementary quantitative and qualitative methods will help to provide a nuanced understanding and explain the complexities of multidimensional poverty and truly reflect people's perception of it.

1.3 Research questions

Having reviewed all the gaps in the literature, the key rationales of the study, and poverty reduction policies as described in the earlier sections, this study proposes that the main research question should be "what are the factors that explain the poverty dynamics, both the movement into and out of poverty, and poverty persistence of rural households in Thailand between 1988 and 2009?"

The following three sub-questions are also raised:

- What are the patterns of poverty dynamics in rural households in Thailand between 1988 and 2009?
- What are underlying factors and mechanism that determine poverty dynamics? (What enables households to move out of poverty? What leads households to move into poverty? What causes households to remain in chronic poverty?)
- How can self-assessments and life history interviews from a qualitative approach help to explain the quantitative findings? Do they complement or contrast with each other?

1.4 Objectives of the study

The following key objectives are set in order to respond to the research questions set out in the previous section:

- To identify patterns of poverty dynamics of rural households in Thailand by drawing on a panel study of six villages in the Northeast and Central regions of Thailand between 1988 and 2009.

- To determine the underlying factors and processes that contribute to poverty dynamics, both in terms of the movement into and out of poverty, and the poverty persistence of rural households in Thailand.
- To analyse and triangulate whether or not the findings of poverty dynamics from the qualitative interviews accord with the findings from the quantitative survey. The findings of this comparative analysis are expected to help to comprehend the complementary and contrasting aspects of the two methodological approaches.
- To provide policy implications on poverty alleviation from the findings on the poverty dynamics of rural Thailand.

1.5 Organisation of the thesis

Chapter 2 covers all the state of the art studies of poverty dynamics, including key conceptual and analytical frameworks, as well as an empirical literature review of poverty dynamic studies in developing countries. The first section of the chapter begins with the concept and measurement of poverty by providing a broad introduction to different approaches used to define and measure poverty. The next section focuses on two main issues to better understand poverty dynamics, the first of which is the identification of the patterns of poverty dynamics and how many people experience each of those patterns. The second provides a description or explanation of poverty dynamics, with the aim of understanding the major factors associated with each poverty dynamics pattern. Then, the chapter presents a livelihood framework as the basic analytical framework of the study.

Chapter 3 defines quantitative and qualitative methodological approaches and discusses ways of combining them to analyse poverty in general, as well as the explaining the advantages and limitations of such a combination. Then, further details of particularly applying a combination of both approaches in poverty dynamics are discussed. Two phases of a methodological integration of quantitative and qualitative methods for the same households at both the data collection and data analysis stage are adopted in this study. Firstly, a qualitative research method is integrated into a

quantitative survey by incorporating subjective questions at the end of a survey questionnaire to the same 240 households. This is done to facilitate the triangulation of the findings from both methods to ascertain whether they confirm or refute each other. Secondly, a quantitative research method based on household survey data is sequentially integrated with 24 case studies of life history interviews. More specifically, a sequential integration is carried out using the results from the quantitative poverty matrix from the household survey to design and identify selected case studies for in-depth life history interviews.

Chapter 4 provides a quantitative analytical analysis based on the descriptive analysis of 240 sample households. Descriptive statistics were obtained from a survey of the key aspects of the household undertaken at the first stage of analysis by particularly focusing on the household's characteristics and household assets. The nature of the poverty transition matrices was also observed at a later stage of the analysis. Following the poverty transition matrices, households were classified into four main dynamic categories, namely, chronic poor, moving out of poverty, moving into poverty, and never poor. Then, the key socio-economic characteristics of the sample households and key asset endowments in each dynamic category were analysed in detail.

Chapter 5 identifies the key factors associated with four categories of poverty dynamics obtained from the transition matrices in the previous chapter. Following a multivariate approach, three main econometric models were applied. These included (i) a discrete dependent variable model of poverty status (multinomial logit and probit regression), (ii) a continuous model of changes in per capita income, and (iii) a quantile regression model.

Chapter 6 presents the empirical results of the poverty dynamics and changing lives of rural households in Thailand from the perspective of local people. Following the qualitative methodological approach, a package of tools was obtained for the collection of qualitative data in the sample village sites. The qualitative research used for the study comprised two main methods, namely, self-rated poverty dynamics and in-depth life history interviews. Firstly, the qualitative method involves a self-rated poverty assessment of the same 240 sampled households as in the survey. Open-ended questions

were incorporated at the end of the questionnaire in order to directly obtain the self-perception of how people rated their poverty status and how they perceived changes in poverty, as well as how they identified the factors associated with those changes. Secondly, 24 of the surveyed households were then purposely selected for in-depth life history interviews at greater length, which were designed to obtain a richer understanding of the extent of poverty dynamics and the key underlying factors, including households' resources and the economic and social processes that explain poverty dynamics.

Chapter 7 investigates whether or not the findings from the qualitative interviews accord with the findings from the quantitative survey. This helps to comprehend the complementary and contrasting aspects of the two different methodological approaches and reflects some implications from the findings. The chapter begins with a comparison of poverty levels between the quantitative and qualitative approaches. The patterns of poverty dynamics between the income poverty from Chapter 4 and the self-perception measures from Chapter 6 were compared and evaluated. The analysis further explores the key characteristics of households classified by the two approaches. Key factors associated with four categories of poverty dynamics will also be triangulated between the two approaches in order to understand the strengths and weaknesses of each methodological approach. Lastly, selected case studies from the life history interviews were described in detail together with life trajectory diagrams in order to further analyse the disjunctured results between the quantitative and qualitative methods.

Chapter 8 summarises the key findings of each chapter of the study. It also presents an evaluation of Thailand's current poverty alleviation policies and finally makes some recommendations for the design of the country's future poverty alleviation strategies.

CHAPTER 2

Literature reviews:

Conceptual and analytical framework

2.1 Introduction

A broad range of literature on poverty analysis is typically based on static or cross-sectional quantitative studies that can, at best, be considered to illustrate only net changes in poverty incidence (Grootaert et al., 1995). Either increases or declines in poverty rates do not, however, indicate how many people have escaped poverty and how many new poor have joined the existing poor. In addition, they cannot explain the mechanism of poverty dynamics or how people move into and out of poverty over time. A study of the dynamics process of poverty can fill this gap by identifying the dynamic patterns of both transitory and chronic poverty, as well as analysing the underlying factors associated with changes in poverty status. The introduction of a temporal dimension to poverty research has become a key challenge in development studies, with theoretical and empirical research in developing countries being developed since the early 2000s due to the recent availability of panel data.

Most studies that examine poverty dynamics focus exclusively on a quantitative approach, which requires the collection of data from a panel survey based primarily on an income or consumption-based measure of poverty (Baulch and Hoddinott, 2000). A poverty analysis using income or consumption surveys requires objective, quantitative data to be collected from large samples of households and generalised (Deaton, 1997). While these quantitative studies are informative and helpful for identifying which households move into and out of poverty, relying on panel surveys alone limits what can be learned from the dynamic process, as well as the complex and multidimensional aspects of poverty. Therefore, over the last few years, there has been an increasing focus on combining a quantitative survey and a qualitative research methodological approach to further understand poverty dynamics (Lawson et al., 2007, Addison et al., 2009). Nevertheless, the volume of empirical research that combines both approaches still

remains extremely limited, particularly in terms of studies that genuinely integrate both methods using the same sampling frame by tracking the same households (Lawson et al., 2007). Moreover, while the significant efforts of development agencies are mainly directed toward moving people out of poverty, relatively few studies have explored the key factors and processes associated with the poverty dynamics of both moving into and out of poverty (Krishna, 2010a). This shows that gaps still remain in the literature and proves the need for more research into the poverty dynamics in developing countries, especially over a long-term period.

The main purpose of this chapter is to provide a conceptual and analytical framework that contributes to a broader understanding of the nature and construction of poverty dynamics. In order to position this knowledge into existing literature, the study examines the temporal dimension of poverty using different approaches from narrow income poverty to broader views of poverty based on people's perception. The study also proposes a framework to understand poverty dynamics focusing on both the outcomes and processes. The outcomes of poverty dynamics are presented by comparing the poverty status of households between the two study periods, 1988 and 2009. This comparative study identifies the outcomes of poverty dynamics patterns based on two key approaches, namely, income poverty and self-rated poverty. Meanwhile, in terms of processes, the study also aims to investigate the interplay between livelihood assets and poverty dynamics, and to understand the critical processes that seem to determine poverty dynamics**.** The outcomes and processes underlying poverty dynamics will be explored using a combination of quantitative and qualitative methodological approaches. The qualitative approach is expected to complement the quantitative approach and yield a richer and nuanced understanding of the broader dimensions of poverty, as well as underlying processes and contextual factors associated with poverty dynamics.

This chapter is organised in line with the above framework, and the first section begins with the concept and measurement of poverty by providing a broad introduction to the different approaches used to define and measure poverty. It is widely accepted that poverty is multi-dimensional in nature; it is not only a lack of income, but is also seen to be a lack of human capabilities and deprivation of well-being. Furthermore, it is

important to determine people's perception of poverty and how they define their real experience in order to fully understand all the many aspects of poverty.

The second section of the chapter focuses on two main themes for understanding poverty dynamics, the first of which is the identification or pattern of poverty dynamics of the number of people who experience each of the dynamics patterns. The second is the determinant or explanation of poverty dynamics. The aim of this section is to review the major factors associated with each poverty dynamics pattern. This is followed by a livelihood framework as the basic analytical framework of the thesis. As stated earlier, the most significant step of a poverty dynamics analysis is not only to pay attention to what people become or the outcome, but also to understand what people have and the process of how they make use of what they have in order to achieve those outcomes.

2.2 Conceptual framework

2.2.1 Concept and measurement of poverty

As is well-recognised, poverty is complex and has a multi-dimensional nature, which can be described in many different ways as it affects different people. There are a number of different conceptual approaches to understanding poverty. The so-called 'new poverty agenda' is usefully summarised in terms of two key alternative approaches to the concept and measurement of poverty: the objective economic and the subjective approach (Lipton and Maxwell, 1992).

The first approach is the objective economic approach. The concept of poverty under the income approach, or the term 'income poverty', is defined based on the minimum acceptable level of standard of living comprising a set of basic human necessities including nutritional requirements, as well as other basic necessities for each individual or household. This approach focuses on material needs such as food and non-food consumption items. The traditional list of tangible basic needs includes food (including water), shelter, and clothing. With the recognition of more aspects of poverty, basic needs have moved further than income to include access to certain types of essential services such as education, healthcare, sanitation facilities and public transport (UNDP, 1997). This approach represents income or consumption as the best proxy to

measure poverty. In this respect, it is essential to collect data about income or consumption, normally obtained from large-scale and sample household surveys.

In order to identify poverty, the approach argues that individuals or households are determined to be poor if their income or expenditure falls below a certain minimum threshold level, normally known as the poverty line. This serves as a critical cut-off or minimum income threshold an individual needs to afford to purchase a basic bundle of goods and services. Three main indicators are widely used to measure the aggregate issues of poverty, namely, the incidence (or headcount), depth (or poverty gap) and severity (or poverty gap squared)[18]. A number of studies address the measure of poverty, but the most classic and well-known is the work produced by Foster, Greer and Thorbecke (see Foster et al., 1984).

The income approach is widely accepted to be the key approach in poverty concepts and measurement and remains the mainstay of poverty analysis. The income approach not only has its own strengths, being quantifiable and able to compare the sample survey data at both household and national levels, but it is also also useful for practical and policy decision-making processes (Greeley, 1994, Chambers, 1995, Baulch, 1996, Ravillion, 1996, World Bank, 2001b, Sumner, 2007).

Nevertheless, there is widespread acceptance that the income approach has limited explanatory power and is not the only approach of interest in a comprehensive poverty analysis. One of the major reasons for finding the income measure of poverty to be insufficient is because income is only considered to be the means, not the end or ultimate outcome that people actually experience. In addition, the income approach cannot include common property resources and public services, such as health, education and other infrastructure services. A person whose income is above the poverty line may still face other forms of human poverty, such as illiteracy, illness that could lead to premature mortality, and a lack of access to public services (Anand and Sen,

[18] The headcount index is calculated by the proportion of the population for whom income or consumption (or other appropriate measures of living standard) is less than the poverty line. The poverty gap is a good indication of poverty depth, suggesting the distance of the poor from the poverty line. The poverty gap squared is the poverty gap of the poor weighed by those poverty gaps when assessing aggregate poverty (Ravillion, 1996). This takes into account the inequality of the poor, whereby a higher weight is placed on those households that remain further from the poverty line.

1997, Thorbecke, 2007). Moreover, it also includes some unproductive items, such as cigarette and alcohol consumption, which are not considered to be conducive to sustaining people's living standard (Chambers, 1995). Therefore, it needs to be supplemented by other indicators of well-being in order to fully understand the multiple dimensions of poverty (World Bank, 2001b).

The second approach is the multidimensional and subjective approach, in which poverty is viewed in multidimensional aspects. One of the most influential theoretical approaches is the capabilities approach developed by Amartya Sen. According to this approach, poverty can be identified as being the deprivation of capabilities whereby a person lacks the opportunity to achieve such valuable functionings and desired levels of well-being, or the freedom to do or be what all humans can do or can be. (Sen, 1983, Sen, 1993). The conceptual shift of multidimensional poverty has increasingly become a consensus among policy-makers, scholars and development specialists. There have been considerable advances in the conceptualisation and measurement of poverty, particularly since 1990, when the first Human Development Report was launched, with a movement away from the income or consumption-based and materialist-based basic needs approaches, to acknowledge the importance of a multidimensional concept of poverty under broader-based approaches. These include poverty in the capabilities approach or the human poverty and subjective well-being approach (Baulch, 1996, UNDP, 1997, Anand and Sen, 1997, Kakwani and Silber, 2008, Spicker, 2007). According to the UNDP poverty report, poverty means the deprivation of opportunities and choices that lead to a long, healthy and creative life, and the inability to achieve a standard of living, freedom, dignity, self-respect and the respect of others (UNDP, 1997). Poverty can be reflected as an insufficiency of resources, vulnerability to adverse shocks such as illness, violence and loss of livelihood, and powerlessness in the political, social and economic life of one's community and country (World Bank, 2001b).

Furthermore, Chambers (1995) also argues that local people as insiders, and especially the poor themselves, should be given the opportunity to provide their own definition and assessment of poverty. In his recent review paper of poverty analyses, Chambers (2007) explains that the traditional income approach of professionals, as outsiders, has some flaws in that it only shows one aspect of poverty. It cannot capture

all the other important dimensions of poverty, particularly non-income aspects; for example, social inferiority, isolation, physical weakness and vulnerability. The income approach, or what he calls an economic reductionism or quantitative and non-contextual approach, omits the complex conditions, diverse experiences, and the realities of people living in poverty. In terms of methodological responses to the multidimensionality of poverty, he suggests that a participatory approach can reveal the realities of the poor, as well as some neglected parts of poverty, including the feelings and attitudes of local people that cannot be captured by the income approach. He emphasises that poor people's own perception of poverty is important to obtain a complete understanding of poverty. As well as helping to identify the poor, a participatory appraisal can generate the real experiences of local and poor people, as well as the feelings people have about being poor in the local context (Narayan et al., 2000). The participatory approach generally involves local people as analysts in the research process. This means that local people, including the poor, can analyse the nature of poverty and evaluate why they remain poor or how they move out or move into poverty.

In terms of measurement, since poverty is multidimensional, several researchers have not only attempted to identify income or consumption-based measures of poverty, but also non-income-based dimensions and subjective measures of poverty (Atkinson, 2003, Bourguignon and Chakravarty, 2003, Duclos and Araar, 2006, Alkire and Foster, 2007). In terms of policy implications, it has been found that different approaches and methods used to identify poverty capture different groups of poor people and lead to different estimates of poverty, which has significant implications for a poverty reduction policy (Laderchi et al., 2003).

2.2.2 Understanding poverty dynamics

Not only the metric dimension or aspects by which poverty is assessed is important, but also the temporal dimension is also essential for contemporary poverty studies. It is well recognised that poverty is dynamic and can change over time. The central factor in poverty dynamics literature is that some of the poor are not poor all the time. In addition, not all poor people are born poor; they can move into and out of

poverty (Baulch and Hoddinott, 2000, Yaqub, 2000, Addison et al., 2009, Krishna, 2010a). Only recently, there have been more systematic efforts to apply quantitative data to document the process of changing poverty in dynamic terms. An analysis of poverty dynamics requires a longitudinal series that traces the same individuals or households over time to record more comprehensive stories of changes in poverty than a conventional cross-sectional data analysis. For example, in their study of poverty transition in Uganda, Lawson, McKay and Okidi (2006) recorded that, between 1992 and 1999, poverty fell by about 20 percent as the headcount rate fell from 56 percent to 35 percent. However, the dynamics of poverty provided a richer picture than the decline in the poverty rate. The results of the poverty dynamics suggested that almost 30 percent of poor households in 1992 managed to move out of poverty by 1999, while 10 percent of non-poor households fell into poverty. Meanwhile, 19 percent of households that were poor in 1992 remained poor in 1999. This proves that not everyone who lives above or below the poverty threshold at one point in time will always retain the same poverty status over time. Thus, it is necessary to move efforts from a cross-sectional analysis of poverty into poverty dynamics research in order to obtain a thorough understanding of the nature and characteristics of poverty dynamics, which could assist the design of an appropriate policy.

Since the late 1980s, many studies have been developed to examine the duration and patterns of poverty by tracing the same individuals or households over a period of time (Bane and Ellwood, 1986, Gaiha, 1988). Most of these have been found in developed countries and are basically based on a quantitative data analysis due to the availability of longitudinal data. There have been increasing numbers of poverty dynamics studies in developing countries since the early 2000s due to the availability of additional panel datasets[19].

[19] While there are a few examples of panel surveys that are broadly nationally representative (e.g., Uganda, Vietnam and the planned National Income Dynamics Study in South Africa), most panel surveys are restricted to particular locations or sub-groups of people.

Some countries have begun to establish their own research institutes and national survey projects to specifically study the poverty dynamics in developing countries; for example, the Chronic Poverty Research Centre (CPRC) in the United Kingdom, the KwaZulu-Natal Income Dynamics Study (KIDS) in South Africa, the Rural Household Survey (ERHS) in Ethiopia, International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) in India, and the Kagera survey in Tanzania.

Despite the growing number of panel datasets, many of the available datasets only contain a limited number of waves (typically two or three), covering short time periods (generally five years or less) and relatively small samples (Lawson et al., 2003, Dercon and Shapiro, 2007, Howe and McKay, 2007). About half of the 30 panel data that covers developing and transitional countries are two-waved datasets and almost all of them are based on income or consumption poverty (Lawson et al., 2003). In addition, a quantitative panel analysis of poverty dynamics normally considers relatively short-run fluctuations in poverty (Addison et al., 2009). With a more updated review of post-2000 research on poverty mobility in 44 panels of 30 developing countries, Dercon and Shapiro (2007) also indicate that, despite their increasing numbers, two-thirds of panel studies only cover short time periods of less than five years, while only one-fifth or ten panels are more than ten-year studies.

While studies of poverty dynamics using panel survey data have remained dominant, there has also been an increasing use of qualitative and participatory approaches to poverty dynamic research. There are examples of participatory methods of poverty dynamics analyses (see Shaffer, 2002, Krishna, 2007, Kristjanson et al., 2009, DeWeerdt, 2010). Over the past few years, a new adapted participatory methodology called the Stage-of-Progress (SOP) method has been developed as a new participatory method to analyse poverty dynamics. The SOP method has been used since 2003 to study poverty dynamics in parts of India, Kenya, Peru, Uganda and Colombia (see Krishna, 2010b). This method was developed to to create a ladder from poor to rich to examine dynamics or changes in households' poverty status over time. A retrospective interview of this method also helps to reveal the reasons for moving into and out of poverty. Nevertheless, there is still relatively little research on poverty dynamics based on the qualitative approach. This suggests that the theoretical and

empirical studies of poverty dynamics in developing countries still remain in their infancy and require further development (Narayan et al., 2009).

The overall evidence in poverty dynamics literature suggests that understanding the nature of poverty dynamics involves two main issues (Yaqub, 2000), the first of which is the identification of various poverty dynamic patterns and the number of people who experience each of those patterns, while the second is the determination or explanation of poverty dynamics in an effort to understand the correlation and causes of each poverty dynamic pattern.

(1) Identification of the extent of poverty dynamics

Static poverty studies are unable to distinguish chronic poverty from transient poverty, or the 'always poor' from the 'sometimes poor' and the 'never poor'. Those identified as being poor in a particular year from a static poverty analysis generally include both the 'always poor' and the 'sometimes poor' that just happen to be poor that year. Poverty dynamics literature identifies and quantifies such categories of poor by including a temporal or time dimension to the measure of poverty.

The key notion of poverty dynamics is based on the fact that the poor are not equally poor at different points in time; people may be poor for short or long periods, unusually or typically, transitorily or chronically (Yaqub, 2000, Yaqub, 2003). In general, poverty dynamics literature proposes three common types of poverty categorisation: people who never experience poverty, i.e. the 'non-poor'; people who have a one-off experience, or sometimes experience poverty either moving out or moving into poverty, i.e. the 'sometimes poor' or 'transient poor'; and those who have remained in poverty for the whole period, namely, the 'always poor' or 'chronic poor'. The dynamics of poverty have been examined to show that moving into and out of poverty is a common phenomenon. Poverty dynamics can either be viewed on a year-to-year basis, across the life course from childhood to adulthood, or in terms of the intergenerational change or continuity within families (Yaqub, 2000, Hulme et al., 2001).

According to the early literature of poverty dynamics in developing countries, there are two main methods to identify patterns of poverty dynamics (Baulch and Hoddinott, 2000, Mckay and Lawson, 2003), the first of which is *'the spells approach',* which focuses on the transition of one household's poverty status to another (see for example Baulch and McCulloch, 2002, Baulch and Masset, 2002, Sen, 2003, Lawson et al., 2006, Justino et al., 2008, Hossain, 2009, Lohano, 2011). Basically, the approach counts the number or length of periods (spells) of poverty experienced by households. Normally, this method is based on measuring income or expenditure and comparing it to the poverty line. In this approach, poor households are classified into (i) chronic or always poor if they experience poverty (with income or expenditure below the poverty line) at all points in time. (ii) transient or sometimes poor if they experience poverty in at least one point in time. (iii) never poor if they never experience poverty in all the study periods. Most available household survey data using this method generally consists of panels with only two waves. This is because it is likely that the spell approach would overestimate transient poverty with more than two waves of panel data (Hulme and Shepherd, 2003). For example, if the period of study covers five years, a household that is poor in only one year is classified as being transient poor, similar to a household that is poor in four out of five years.

The second approach is *'the component approach'* which focuses on estimating the transitory and permanent components of households' welfare (see for example Jalan and Ravillion, 2000, Haddad and Ahmed, 2003). This approach suggests that income and consumption have permanent and fluctuating components. It distinguishes the permanent component of households' income or consumption from its transitory fluctuation around that permanent level. Chronic poor are households with a permanent component below the poverty line. This method involves multiple waves of panel data. At least three repeated observations of households' average welfare are needed (Baulch and Hoddinott, 2000).

In a comprehensive literature review of poverty dynamics in developing countries, Baulch and Hoddinott (2000) found that the number of people moving into and out of poverty or mired in transient poverty was generally greater than the number of chronic poor. The results of 13 panel studies in 10 different countries show that there

is a larger percentage of sometimes-poor households than households that are characterised as always being poor. For example, when studying the poverty dynamics in rural Pakistan using five years' panel data, Baulch and McCulloch (1998) found that, while the incidence of poverty in rural Pakistan was high at around 20-30 percent each year, an even bigger ratio of households experienced movement into and out of poverty. Half of all households moved out of poverty from one year to the next, but only 3 percent remained poor for all the five years. A similar situation has also been found in East Asian countries. In their study of poverty dynamics during economic and trade reforms in Vietnam, Justino and Litchfield (2004) found that, along with a significant decline in poverty incidence in Vietnam, there was a considerable mobility of households both into and out of poverty. According to the panel data between 1992/3 and 1997/8, the poverty rate fell by 20 percent. The dynamics of poverty also show that 32 percent of households experienced transitory poverty, 27 percent of which managed to move out of poverty and the other 5 percent fell into it, while 29 percent of households always remained poor. These empirical studies illustrate the fact that most of the poor in developing countries were characterised as being the transitory poor. A similar situation has also been observed in industrialised countries (Duncan, 1993, Nolan and Erikson, 2007). McKay and Lawson (2002) also present evidence based on developing countries' panel data that poverty in most studies seems to be more transient. However, they emphasise that using panel data sets as an important tool to analyse the inter-temporal variations of poverty can generate different poverty patterns, since panel data varies with regard to time duration, number of waves, sample size, and geographic coverage.

In a more updated review of poverty mobility literature, Dercon and Shapiro (2007) found a similar situation, in which more than half of the poor people from almost 50 panel surveys of 15 developing countries only remained in poverty temporarily. In addition, they also stated that it was likely that the more number of rounds used in the survey, the more people moved into and out of poverty, and were classified as being sometimes poor. However, there are likely to be notable differences in the dynamic patterns of poverty in country-by-country situations. The range of estimates of the 'sometimes poor' as a proportion of the 'ever poor' varies from 24 percent in Kenya to a

high 75 percent in Vietnam and 90 percent in Ethiopia (ibid). Data from panel survey studies in selected Asian countries shown in Table 2.2 also demonstrates that the percentage of households that sometimes experience poverty also diverges from 52 percent in Bangladesh to more than 90 percent in Pakistan. It can be clearly seen that the results of poverty transition can vary considerably from country to country and studies of different survey years.

Table 2.1: Patterns of household poverty dynamics from panel data analyses in selected Asian countries

Countries	Periods	Always poor	Sometimes poor			Never poor	Sometimes poor as % of ever poor*	Source
				Move out of poverty	Move into poverty			
Bangladesh	1987-2000	31.4	33.4	25.7	17.7	25.1	52	Sen (2003)
	1994-2001	11.7	30.6	18.7	11.9	57.8	72	Kabeer (2004)
	1994-2006	16.0	49.0	44.0	5.0	35.0	75	Davis and Baulch (2009)
China	1985-1990	6.2	47.8	-	-	46.0	88	Jalan and Ravillion (2000)
	1991-1995	9.6	22.5	15.3	7.2	67.8	70	McCulloch and Calandrino (2002)
India	1970-1982	25.5	35.7	22.6	13.1	38.8	58	Bhide and Mehta (2004)
Indonesia	1993-1997	7.8	19.0	7.4	11.6	73.2	71	Alisjabahna and Yusuf (2003)
Pakistan	1986-1991	3.0	55.0	-	-	42.0	94	McCulloch and Baulch (2000)
Vietnam	1992-1997	28.7	32.0	27.3	4.7	39.2	56	Justino and Litchfield (2004)

Source: Summarised directly from different published sources as indicated in the last column.

Note: *The percentage of sometimes poor to ever poor is calculated using the ratio of those poor in some waves to those poor in any wave including the always poor.

(2) Factors associated with poverty dynamics

It is not only important to identify the pattern of poverty, but it is also essential to understand the factors that underlie poverty dynamics; for example, why some households stay poor while others escape poverty over a period of time, in order to produce profound implications for appropriate policies, as well as enable anti-poverty policies to be targeted at particular poor groups. It is important to have a better understanding of different types of poverty dynamics, since poverty persistence and poverty transition have different determinants (McKay and Lawson, 2002).

One of the overarching implications for a poverty dynamics policy is the need to target different types of poverty dynamics. Appropriate policy responses may differ depending on the type of poverty dynamics of the target population. Policies for those whose poverty is transitory should be distinguished from those for people faced with chronic or persistent poverty (McCulloch and Baulch, 2000, Barrett, 2005a, Krishna, 2010a). For example, if the majority of the population is trapped in poverty for most of their lives, then poverty reduction policies need to deal more with structural reforms that can help to build up and sustain their assets in the long term, such as asset redistribution and long-term investment, particularly in infrastructure that can provide access to health, education and other basic infrastructure services. However, if a large part of the population is transient poor, experiencing poverty for short durations subject to changes of household characteristics or some shocks, policies are likely to take the form of temporary intervention that can tackle short-term fluctuations. For example, measures to address transient poverty can be in different forms of safety nets, such as provision for credit and insurance schemes that can reduce their vulnerability and help them to recover to a non-poor status. Barrett (2005a) also describes how policies for moving people out of poverty, so called ‘cargo net’ policies including for example targeted microfinance and agricultural input subsidies, differ from those that help to prevent them from moving into chronic poverty or ‘safety net’ policies namely emergency feeding programmes and crop or unemployment insurance. In addition, Krishna (2010a) emphasises how two kinds of parallel policies are required to reduce poverty, namely, those that help to enhance people’s escape from poverty and those that can prevent their descent into poverty.

When reviewing several empirical works on poverty dynamics and economic mobility, Baulch and Hoddinott (2000) state that the dynamics over a long-term period mainly depend on four key factors including (i) the accumulation of asset endowments, (ii) the initial conditions of assets, (iii) changes in the return to those assets, and (iv) the long-term impact of shocks. According to their study, transitory components of poverty seem to relate more to households' vulnerability or inability to deal with negative shocks or regulate their consumption, while persistent poverty or chronic poverty is mainly associated with a low level of asset endowment.

In their study of chronic and transient poverty in rural China using panel data over a six-year period between 1985 and 1990, Jalan and Ravillion (1998a) found that households' physical capital holding was an important determinant of both chronic and transient poverty. Nevertheless, household demographics, level of education and health status of the family members seemed to be more important for chronic poverty, but appeared to be insignificant for the transient kind, which was associated more with random shocks, such as income volatility.

McKay and Lawson (2002) also confirmed this understanding. Having made a comprehensive review based on several available panel data studies, they suggested that the characteristics of chronic and transient poverty have significant distinctions. Chronic poverty is associated with the lack or low level of asset endowments, such as education, physical assets, and land ownership, engagement in low productivity activities, high dependency ratio, and location in remote or otherwise disadvantaged areas. Meanwhile, common characteristics associated with transient poverty include the inability of households to cope with fluctuations or shocks such as the impact of changes in the return of assets or illness that could affect their income and their living conditions.

Not only do chronic and transient poverty need to be distinguished, but also the different patterns of poverty transition, which can be classified into two main sub-categories, namely, moving out of poverty and moving into poverty. A comprehensive understanding of the dynamic process of poverty can eventually lead to appropriate poverty-related policies. The analysis should not only focus on how people move out of poverty or not, but should also include the alternative aspect of how people move into

poverty. According to Krishna (2006), *"future poverty policies will need to consider not only those who have been left behind by growth, but must also pay deliberate attention to the significant numbers of households that continue to fall into poverty"*. Narayan and Petesch (2007) also emphasise the need for further research that particularly focuses on identifying the factors and causes of poverty dynamics, both poverty persistence and poverty mobility, including moving into and out of poverty.

As mentioned above, despite the growing number of poverty dynamic studies in developing countries, there have been few empirical studies of both types of poverty transition, particularly long-term poverty dynamics. Many reviews of panel data studies of poverty dynamics in developing countries show that most surveys used in research are conducted over less than five years (Dercon and Shapiro, 2007). Only one-third[20] of panel data research studies long-term dynamics (Lawson et al., 2003). This shows that relatively short intervals of time have been generally used in panel studies on poverty dynamics (Addison et al, 2009). However, household livelihood strategies are normally constructed in terms of generational time horizons. For example, people invest in the education of their children now in order to wait until their children grow up and be able to earn income to escape poverty. Farmers invest in their agricultural farm in terms of machinery, land, and irrigation sytem, so that they can harvest a large amount of crops in years to come. Therfore, in order to analyse issues that pertain to household mobility of what households do for their living, one needs to examine households' experiences over relatively long period of time.

Moreover, only than half of these few long duration studies particularly focus on both the paths into and out of poverty. In their review of more than 40 quantitative panel studies of developing countries, Dercon and Shapiro (2007) found that these two transitions of poverty are not quite perfectly-reflected images of each other. The most significant factors for facilitating people to move out of poverty were household and community endowments, such as assets and infrastructure, while shocks and risks

[20] Lawson, McKay and Moore (2003) collated 51 panel datasets in 30 developing and transitional countries, about 16 panels or 30 percent were long-term panels covering more than five years. Meanwhile, recent reviews of a 44-panel dataset used in recent research of around 30 different countries by Dercon and Shapiro (2007) also confirm this trend. About 20 percent of these 44 panels are series with a six to ten year span and another 10 percent last for more than ten years .

experienced by households played an important role in pushing people into poverty or keeping them poor. This is very important in the context of policy purposes because the different factors associated with particular types of poverty transition could lead to different policy implications. According to the Table 2.2, while the number of studies of long-term poverty dynamics that explore movements into and out of poverty has increased, there are still very few of them.

While the quantitative approach based on a household survey still remains dominant in poverty dynamic studies, multidisciplinary methods by mixing a quantitative panel survey analysis with qualitative and participatory methods at community or household levels have also been used to explain the factors that are most likely to contribute to movement in and out of poverty in the context of people's lives. For example, Sen (2003) identified patterns of poverty dynamics in Bangladesh between 1987 and 2000 by using a panel data analysis together with qualitative interviews based on a livelihood framework to examine the factors that influenced changes in households' economic well-being, both ascending and descending. The findings of his study show that escaping from poverty is associated with households' initial endowments and asset accumulation, which could be obtained from multiple livelihood activities, such as income diversification, occupational shift to off-farm activities, and migration. The 2008 World Development Report also suggests the significance of farm and non-farm diversification on pathways out of poverty. Longitudinal data studies in several developing countries indicate that many rural households design their livelihood strategies by the three main pathways of farming diversification, non-farm labour employment and migration in order to move out of poverty (World Bank, 2008). While several studies have explored the above-mentioned factors that explain how people can move themselves out of poverty, a relatively small number of studies explore the factors associated with moving into poverty.

Meanwhile, the use of a participatory approach to poverty dynamics analyses for long-term periods has also increased, bringing additional useful knowledge and research techniques. New participatory methods for studying poverty dynamics have been developed in recent years using community-based focus group discussions; for example, the Stage-of-Progress (SOP) method (see Krishna et al., 2006, Krishna, 2007, Krishna,

2010a) and peer assessment to assess households' position on the so-called 'ladder of life' (DeWeerdt, 2010). This is a useful diagnostic tool for examining the community definition of poverty, assessing changes in poverty status over time and identifying factors associated with the movement into and out of poverty. Krishna and the team attempted to apply the SOP method to explore the causes associated with households' escape and entry into poverty in Central and Western of Uganda over the past 25 years. They found that, while ill health and health-related factors were the key reasons for the descent into poverty, income diversification and land-related factors were important factors for households to escape poverty.

Evidence from most long panel studies using both quantitative and qualitative approaches is summarised in Table 2.3 below. This shows the important trend of changes in households' asset-based factors, and illustrates that employment, land and education are the key factors of the escape from poverty, while negative shocks and health-related problems are the key reasons for the descent into poverty. The table shows that there has been little research into long-term poverty dynamics that explores both movements into and out of poverty, particularly in Asian countries.

Table 2.2: Review of estimated determinants of moving into and out of poverty from selected longitudinal household studies in developing countries

Source	Country	Years	Methods	Significant factors of moving out of poverty	Significant factors of moving into poverty
Scott and Litchfield (1994)	Chile	1968-1986	• Ordered Logit model for (i) downwardly mobile group (ii) upwardly mobile group • Probit regression model	Area of land owned, age of household head, average years of schooling of workers, accumulation of land and livestock, dependency ratio Age of household head, accumulation of land and livestock	Per capita income in 1968, Livestock losses
Sen (2003)	Bangladesh	1987-2000	• Descriptive analysis focusing on key household asset-based factors • Interviews with households	*Structural factors* related to the household asset base e.g. asset accumulation, multiple livelihood activities, income diversification, occupational shift to off-farm activities	*Nonstructural factors* related to lifecycle changes and crises and shocks e.g. illness and natural disasters

Source	Country	Years	Methods	Significant factors of moving out of poverty	Significant factors of moving into poverty
Bhide and Mehta (2004)	India	1970-1981	• Probit regression model	Literacy, house owned, increase in cultivated area and income from livestock, better infrastructure	-
Krishna el al. (2006)	Uganda	1980-2004	• Stage-of-progress method (based on participatory approach) • Binary logistic regression	Land productivity improvement, diversification of income sources, business gains from commercial crops and obtaining a job in private sector	*Health-related factors* (illness, healthcare expenses, death of income earner) *Social factors* (family size, funeral and marriage expenses, alcoholism and laziness) *Land factors* (business losses, land division, crop disease, irrigation failure and land exhaustion)
Kristjanso et al. (2009)	Kenya	1990-2005	• Stage-of-progress method	Income diversification, formal sector employment, crop diversification, social factors including help from friends and relatives and inheritance of property	High dependency ratio, illness and heavy healthcare expenses, drought
De Weerdt (2010)	Tanzania	1991-2004	• Regression analysis • Focus group discussion, and life history interviews	Agricultural diversification, Non-farm diversification particularly into business and trade sector, years of schooling	-

Note: Summarised from household studies mainly based on two-waved panel datasets. Long panel poverty dynamics studies were only selected if they covered a survey period of more than ten years.

2.3 Analytical framework

In order to thoroughly understand the complexity of poverty dynamics at a household level, it is most important to start the analysis by establishing a framework that can provide a complete picture of people's lives and way of living. Studies of how households move into or out of poverty need not only to consider the 'ends' or 'outcomes' of changes in income and whether or not the income level moves across the poverty line, but also take into account the 'means' or 'process' by which households' livelihoods are actually constructed and how their livelihood conditions and strategies have changed over time. In other words, it is not only important to examine the

ownership of resources; the analysis needs to also focus on how households make use of those resources.

This study employs a sustainable livelihood approach as a key analytical framework for analysing the dynamics of poverty. This approach is a practical tool to understand the dynamic process of the way in which households, especially those in rural areas, construct their lives and how this process constitutes poverty. The sustainable livelihood approach involves a systematic analysis of the underlying processes and causes of poverty, and also focuses the attention on a broader view of poverty, including the poor's' own perception of poverty. It takes a wide range of factors that cause poverty into account. This study develops its own approach, called the 'Have-Do-Be' livelihood approach to analyse poverty dynamics. It comprises three main components; what people have (assets), what people do with what they have (strategies/ activities) and what the outcome (patterns of poverty dynamics) is.

2.3.1 Sustainable livelihood framework for a poverty analysis

The livelihood perspective has been utilised by many academics and researchers from different disciplines, who have mainly applied the concept of the livelihood approach in a rural development context (Ellis, 2000, Scoones, 2005), particularly the implications for poverty reduction (Chambers, 1995, Ellis and Freeman, 2005). According to Chambers and Conway (1991), a sustainable livelihood encompasses three fundamental concepts, namely, capability, equity and sustainability, and the following four main components: (i) People (who are able to do or be using their livelihood capabilities), (ii) Assets[21] (tangible assets and intangible assets), (iii) Activities (the strategies people adopt to secure their living), and (iv) Gains or outcomes as the core of a livelihood (what people gain from what they do). In brief, they explain that individuals' ability to make a living basically depends on what they have and can

[21] This portfolio of assets includes tangible assets such as stores (e.g. food stocks, stores of valuable items such as gold, jewellery, woven textiles and cash savings) and resources (e.g. land, water, trees, livestock, farm equipment, tools and domestic utensils), as well as intangible assets such as claims (i.e. demands and appeals that can be made for material, moral or other practical support) and access, which is the opportunity in practice to use a resource, store or service or to obtain information, material, technology, employment, food or income.

command, both in terms of livelihood assets and access to resources, and what they can find and make use of with these assets.

In order to thoroughly understand the poverty dynamic processes of how people move into and out of poverty over time, this thesis adopts the livelihood approach as the key analytical framework to analyse the dynamics of poverty, since this can provide more useful and in-depth information about the components and processes poor people use to that create their livelihood strategies. A sustainable livelihood framework is a practical tool for a better understanding of the livelihood approach, especially the livelihood of the rural poor, by focusing on the strengths of the poor or the assets they possess as the key means to make a living (DFID, 2007). This approach regards the strength and potential of the poor or the kinds of assets and capabilities they possess, rather than their weaknesses or what they lack, in order to fundamentally understand the dynamics of poverty and livelihood (Beck, 1994, Moser, 1998). It also focuses on the process of how poor people make use of their assets and convert them into livelihood outcomes. Poor people can be conceptualised as possessing few or a low initial level of assets. At the same time, since it is difficult for them to accumulate or enhance their assets and hence to improve their livelihood outcomes, they become trapped in poverty.

In addition, the livelihood approach has been widely used and referred to in contemporary research on poverty, particularly with the broader shift from narrow income poverty to multi-dimensional approaches. The livelihood approach is useful for exploring poverty because it can provide more insights into the complexity of rural life, of how livelihoods are constructed and the resource strategies used by the rural poor to make a living. In his classical work on poverty and livelihoods, Chambers (1995) emphasises the importance of livelihood, stating that "*In the new understanding of poverty, wealth as an objective is replaced by well-being and employment in jobs by livelihood*."

Like any other model, this framework is a simplified form and cannot represent the full diversity and complexity of livelihoods. Instead, the framework is intended to represent a way of thinking about poverty by providing an analytical structure to facilitate a systematic understanding of the various factors that construct the livelihood

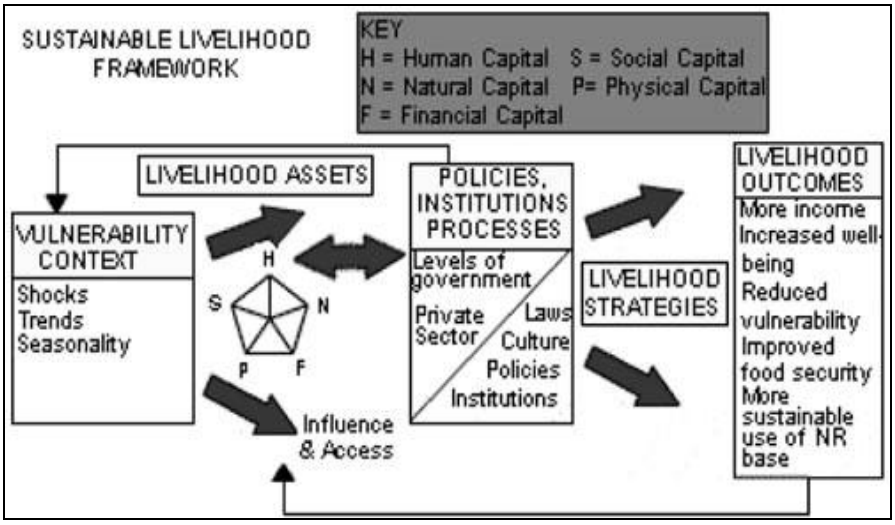
of the poor, and show how they are related. The value of using a framework for a poverty analysis is that it

> '*…encourages users to take a broad and systematic view of the factors that cause poverty — whether these are shocks and adverse trends, poorly functioning institutions and policies, or a basic lack of assets — and to investigate the relations between them. It does not take a sectoral view of poverty, but tries to reconcile the contribution made by all the sectors to building up the stocks of assets upon which people draw to sustain their livelihoods.*'
>
> (DFID, 1991)

The sustainable livelihood approach can be described as a way of thinking about the objectives, scope and priorities for development in order to enhance progress in reducing poverty (Ashley and Carney, 1999).

The sustainable livelihood framework has five key elements, which can be summarised as follows: (i) Livelihood assets. The livelihood framework identifies five core types of capital assets upon which livelihoods are built, including human capital, social capital, physical capital, financial capital and natural capital. (ii) Vulnerability context. The vulnerability context is the external environment that affects people's livelihood. It encompasses shocks, trends and seasonality. (iii) Transforming structures and processes. Structures focus on the public sector, private sector and civil society, and processes focus on policy, laws, culture and institutions. (iv) Livelihood strategies. This term represents a range and combination of activities and choices people make in order to achieve their livelihood goals. (v) Livelihood outcomes. These are the achievements or outputs of livelihood strategies; for example, higher income, reduced poverty, increased well-being and reduced vulnerability. (Carney, 1998) (see Figure 2.1).

Figure 2.1: DFID's Sustainable livelihood framework



Source: Carney, 1998

The sustainable livelihood approach to poverty analysis has several advantages, but it is also faced with some criticism. Bebbington et al. (2007) suggest that the livelihood approach focuses more on what people 'have and control' or the ways in which people aim to access, control and combine different capital or assets. It also tends to underplay the importance of the role of social and cultural resources, including the values and norms people deploy or what they 'think and do' in the pursuit of their livelihood and well-being. Gough and McGregor (Gough et al., 2007) also point out that the livelihood framework only focuses on the notion of capital or what people have as the main explanation of poverty. They argue that the framework needs to go beyond the simplistic view of people's capital or assets to the wider notion of how they use those resources. This argument has mainly evolved from Amartya Sen's notion of 'functioning and capability' (Sen, 1999), in which Sen points out that what is important is not only what people actually have (which indicates the potential actions they could take), but also what they are able to do and be. These concepts were directed to the development of a new form of livelihood approach to understand the social and cultural construction of well-being in developing countries, a so-called resource profiles framework, which was developed by a working group at the University of Bath (see Lewis and McGregor, 1992). This framework argues that livelihood is not just about

what people have, but also what they do and think, including their goals and aspirations, as well as choices they make in order to achieve those goals.

2.3.2 Applying a livelihood framework to research on poverty dynamics

This research follows the key fundamental components of the sustainable livelihood approach by Chambers and Conway (1991) described earlier, which includes assets, activities and outcomes. Moreover, I also pursue the main idea of a resource profile framework that focuses on providing a better understanding of not only the outcomes, but also the structure and dynamic processes of how people construct their livelihood and how these processes evoke changes in their poverty and well-being status. Within this framework, McGregor (2007) suggests a comprehensive way to understand people's well-being, emphasising that a practical concept of well-being should be conceived as being a combination of three key aspects, namely, needs met (what people have), meaningful acts (what people can do with what they have), and satisfaction in achieving goals (how people become/ think about what they have and can do).

Following the basic livelihood and the resource profile frameworks, a set of key questions were developed to structure the study: what assets do people have? (assets), what do people do with what they have to make a living? (strategies/ activities), and how do the outcomes affect their poverty status? (changes in poverty status/ poverty dynamics including income poverty and people's perception of poverty). These three components of the 'Have-Do-Be' livelihood framework as shown in Figure 2.2 can be explained as follows:

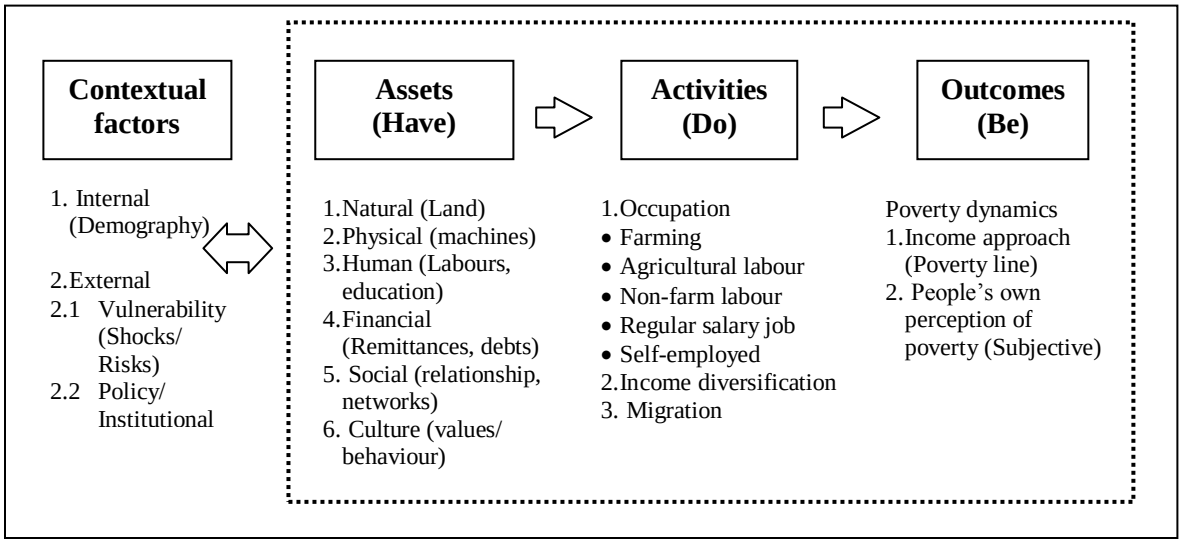
(i) A combination of the assets belonging to a household (Have). Key assets are considered to be essential for the establishment and maintenance of livelihood and how the household's assets have changed over time. The six main types of assets are human (health, education), physical (agricultural and non-agricultural machines and equipment), natural (land), financial (remittances, debts), social (relationship, networks), and culture (values, behaviour).

(ii) The strategies or activities they choose for their survival (Do). Investigating household livelihood activities helps to provide a broader understanding of dynamic processes and changes in households' way of living. Livelihood strategies adopted by households can be broadly divided into different categories according to their major occupation and income source. For example, this can include market-orientated small-farm holders, subsistence-orientated farmers, labour-orientated households (non-farm wage and self-employment), migration-orientated households, and diversified households (combined income from farming, non-farm labour and migration) (World Bank, 2008). Not only will I consider strategies in terms of employment, but I also intend to investigate households' activities that relate to key social and cultural activities, which are considered to be important factors associated with their poverty and well-being, and explore the likelihood that these factors help to move people into and out of poverty.

(iii) The outcomes of these livelihood processes (Be). In this framework, outcomes are presented in terms of the dynamics of poverty classified into four key groups; chronic poor, moving out of poverty, moving into poverty and never poor. Both quantitative and qualitative approaches are applied for the poverty dynamic analysis in order to identify the patterns of these dynamic groups and classify who will be put into each group. Following the quantitative approach, based on a survey data analysis, the approach focuses on an income measure of poverty by constructing a poverty line to represent the minimal accepted material standard of living. Therefore, the outcomes of the quantitative analysis are basically based on changes in household income. Meanwhile, the outcomes of the qualitative analysis provide a subjective self perception of poverty that tends to cover the broader dimensions of poverty rather than just income poverty. This is because the qualitative approach reveals the real experiences of people living in poverty and also the attitudes and perceptions of local villagers, which cover some unobserved aspects of poverty that may not have been captured by the quantitative approach, such as physical well-being (health), freedom, and life satisfaction (Narayan et al., 2000).

It is worth noting here that studying poverty from a subjective and multidimensional approach is a necessary step of contemporary poverty studies in Thailand since, as mentioned in the previous chapter, the country's development plans have shifted the development paradigm from economic to people-centred development. Thailand places economic growth as one of the means to help people to achieve their ultimate end of moving out of poverty and improving their well-being. The Tenth National Plan (2007-2011) states that the notion of well-being in the Thai context is known as 'yuu yen pen suk', or translated as 'live peacefully (yuu yen), be happy (pen suk)'. For Thailand, well-being comprises of five key aspects; good health, secure employment, a warm family life, a green environment, and a strong community (NESDB, 2007). This key notion emphasises the significance of understanding the outcomes of poverty dynamics, not only in terms of income, but also in broader dimensions, particularly by including a subjective assessment of poverty by local people who have direct experience of it.

Figure 2.2: Have-Do-Be Livelihood framework on poverty dynamics



Source: Author's own diagram

2.4 Conclusion

In order to answer the key research question, namely, *"what factors explain the poverty dynamics of rural households in Thailand?"*, three important issues of contemporary poverty literature have been reviewed (Baulch and Hoddinott, 2000, Addison et al., 2009). The first was the metric issue or the way in which poverty is measured. In this study, two key poverty metrics are considered to be important, namely, income poverty and self-rated poverty. The second was temporal or the timeframe within which poverty is assessed. Due to the limitations of static poverty analyses, this research recognises the significance of poverty dynamics drawn from available longitudinal information that tracks the same households over time. The third was the method used to analyse poverty dynamics. A combination of quantitative and qualitative approaches was applied to obtain a complete understanding of poverty dynamics.

The empirical literature of poverty dynamics in developing countries was reviewed in this chapter. It is apparent that, over the last decade, there have been increasing numbers of poverty dynamics studies in developing countries due to the availability of panel datasets. However, there is still comparatively a few number of research in the literature on poverty dynamics in developing countries compared to those in developed countries because of the scarcity of household panel data. Most available datasets were found to contain only short waves, covering five years or less, and relatively small samples. In addition, there have been few recent studies of long-term poverty dynamics that explore the movement both into and out of poverty. Therefore, the theory and empirical studies of poverty dynamics in developing countries remains in its infancy. In addition, the extent of poverty transitions is likely to vary to a considerable degree across different countries and studies. Additional panel studies in other countries are still required to fill the gap in empirical literature in order to further identify the patterns of poverty dynamics, especially in developing countries. To the author's knowledge, the study of poverty dynamics in Thailand based on panel survey tracking the same households over time has never been examined.

Overall, the literature review in this chapter suggests that there is room for further improvement of the understanding of poverty dynamics in theoretical and empirical studies, especially in developing countries. This thesis aims to fill this gap in terms of knowledge of Thailand as one of the countries to have most successfully reduced poverty incidence over the past two decades. Not only does the thesis attempt to fill the gap in the empirical literature for Thailand in particular, but its key objectives also include an attempt to bridge the gap in the literature by further examining the value of combining quantitative and qualitative methodological approaches. This will produce a better understanding of the complexity of poverty dynamics, both from the income and the subjective approach. While the quantitative approach provides the outcomes of income poverty dynamic patterns, micro-level information about people's real experiences and the subjective aspects of poverty gained from the qualitative approach will add richness to understanding poverty and provide important additional insights into the processes and contextual factors that underpin poverty dynamics. The methodological approaches for poverty dynamic studies will be further reviewed in Chapter 3.

CHAPTER 3
Methodology:
Combining quantitative and qualitative approaches

3.1 Introduction

In the past, there was a strong division between the quantitative and qualitative approaches to studying poverty dynamics. Most existing literature on poverty dynamics has tended to largely rely on a quantitative approach, using longitudinal or panel household survey datasets in which poverty has been conceptualised based on income or expenditure (Baulch and Hoddinott, 2000, Lawson et al., 2003). While these quantitative studies are informative and helpful for identifying which households move into and out of poverty, relying on panel survey data alone can limit what can be learned from the dynamic process, as well as the complex and multidimensional aspects of poverty. In addition, the quantitative approach in most developing countries also covers short time periods and involves a limited number of waves, as mentioned earlier in the Section 2.2.2 of Chapter 2. In addition, such panel studies cannot provide information about the poverty status of households in the periods between the years they are observed. Although studies of poverty dynamics using panel survey data have remained dominant, there has also been an increased use of qualitative and participatory approaches to poverty dynamic research (see Shaffer, 2002, Krishna, 2007, Kristjanson et al., 2009, DeWeerdt, 2010). However, these earlier studies of poverty dynamics adopt either quantitative or qualitative methods, which cannot perfectly capture the multidimensionality of poverty.

Over the past few years, there have been increasing attempts to bridge this divide by using the benefits of combining both methods for a better understanding of the complexity of poverty. These combined methods in longitudinal poverty research have been increasingly promoted on the grounds that they capture the strengths of the quantitative approach in identifying and aggregating poverty and understanding the correlation and characteristics of the poor, as well as the strengths of the qualitative

approach in providing a richer definition of poverty, improving the survey design, and gaining more insights into unanticipated processes and contextual factors underlying different categories of the poor that are not easily captured by quantitative studies (see for example Barrett, 2005b, Lawson et al., 2006, Adato et al., 2007, Lawson et al., 2007, Hulme, 2007, Davis and Baulch, 2009, Addison et al., 2009, DeWeerdt, 2010). Addison et al (2009) emphasise that there is growing acceptance that a thorough understanding of poverty requires a cross-disciplinary perspective using a combination of quantitative and qualitative approaches. Since such findings are important to provide more effective guidance for policy, further studies combining both research methods need to be strongly encouraged.

While discussions on combining both methods to assess poverty dynamics are on the rise, the actual application of a mixed methods approach is still very limited and remains in its infancy (Kanbur, 2005). In addition, previous poverty dynamic studies generally used different sample households to conduct qualitative and participatory poverty assessments. The findings from a participatory approach were merely used to cross-reference separate quantitative findings from national panel surveys, and relatively few studies used the same set of households (Lawson et al., 2007). In the case of Thailand, the absence of national panel data suggests a need to initiate a longitudinal study of poverty dynamics. Therefore, this study aims to provide empirical evidence in the case of Thailand, as well as demonstrating the value of using a combination of quantitative and qualitative approaches to analyse poverty dynamics. To my knowledge, this study is one of the first few attempts to apply mixed methods by collecting a primary dataset from the same sample households. I have developed an application that combines and sequences quantitative and qualitative methods into poverty dynamics research in Thailand. A quantitative survey is merged with a qualitative self-assessment using the same sampling frame, and then sequentially integrated with life history interviews. It is expected that the findings from the self-assessment will be triangulated with the quantitative findings, and the information about the life history will be used to enrich the quantitative survey analysis.

This chapter is organised as follows. Firstly, the different ways of combining the quantitative and qualitative methods for a poverty analysis are generally reviewed, as well as the advantages and limitations of such a combination. Secondly, this section particularly considers the application of a combined qualitative and qualitative approach to poverty dynamics. Two stages of the methodological integration of both approaches are discussed, namely, simultaneous mixing and sequential integration. Thirdly, the quantitative methods are described, including the data description and data analysis. Fourthly, the qualitative methods both self-rated poverty dynamics and life history interviews are explained in detail, and finally, the last section concludes the chapter.

3.2 Understanding the combination of quantitative and qualitative approaches in poverty research

In recent years, there has been a significant increase in the discussion of adopting mixed methods or combining quantitative and qualitative approaches, known as q-squared, in many research works on poverty (see for example Carvalho and White, 1997, McGee, 2000, Appleton and booth, 2001, White, 2002, Kanbur, 2003, Parker and Kozel, 2006, Hulme, 2007, Kanbur and Shaffer, 2007). There have also been a number of publication series[22], conferences and workshops[23] that have influenced the proposal of methodological issues related to q-squared research in the analysis of poverty.

3.2.1 Strengths and Weaknesses of quantitative and qualitative approaches

Several studies have discussed the strengths and weaknesses of both approaches and found that purely quantitative and qualitative approaches to poverty studies have some limitations. The quantitative approach provides standardised measures of poverty and produces an econometric analysis that further enables inferences of correlation and

[22] Da Silva (2006) collected recent literature on using mixed methods for poverty analysis in developing countries. Also, the q-squared working paper series can be seen in http://www.q-squared.ca/.

[23] For example, the q-squared conferences at Cornell University, March 15-16, 2001, University of Toronto, May 15-16, 2004 and the Vietnamese Academy of Social Sciences, Hanoi, July 7-8, 2007, the Conference on Combining Conference on Combining Quantitative and Qualitative Methods in Development Research, University of Wales, Swansea, July 1-2, 2002, the Chronic Poverty Research Centre Workshop on Combining Panel Surveys and Life History Methods, London, February 24-25, 2006, the Global Poverty Research Group at the Universities of Manchester and Oxford, the Well-being in Developing Countries Research Group at the University of Bath, etc.

causality between poverty and explanatory variables. Representative sample sizes also ensure that findings are generalised among the wider population. However, some problems still persist in the quantitative approach in terms of measuring poverty or measurement errors. Apart from the problem of mistakes in survey design and data processing errors, another two major problems are the identification of the weight to attach to aspects of household welfare that are not revealed by market behaviour (such as welfare effect of family characteristics and public goods) and the determination of the reference level of welfare above which people are considered not to be poor or on the poverty line (Ravillion, 2003). In addition, quantitative methods also tend to perform less well in explaining these results, particularly when explanations involve issues that are hard to quantify, such as beliefs, attitudes and perceptions, social and political relationships, or the institutional context. This information about people's welfare tends to be found by adopting the qualitative approach. This approach better captures these issues and processes because it permits more flexible questions to be asked for open-ended responses. However, there is a trade-off between depth and breadth, and smaller sample sizes in qualitative studies mean that the findings rarely statistically represent the broader population (Carvalho and White, 1997, Appleton and booth, 2001, Kanbur, 2003, Adato, 2011).

Having learned the different strengths and weaknesses of the quantitative and qualitative methods, it is believed that a combination of both approaches can raise the research to the level of best practice by capturing the strengths of both approaches and avoiding the weaknesses of a single approach (Kanbur, 2003). It is worth noting that the main premise of the use of combined approaches is that it aims to provide a better understanding of the research problem than either approach alone. This can be achieved by the provision of the strengths that offset the weaknesses of using either approach by itself, thereby offering more comprehensive evidence for studying the research problem as well as answering questions that cannot be answered by either approach alone.

Carvalho and White (1997) outlined the strengths and weaknesses of each approach, which are summarised in Table 3.1.

Table 3.1: Strengths and weaknesses of quantitative and qualitative approaches

	Quantitative	Qualitative
Strengths	- Makes aggregate and generalisation possible - Provides results with measurable reliability - Allows simulations of several policy options - Identifies correlations and causality	- Richer definition of poverty - Elicits accurate and deeper responses to certain questions - Explains causal process and focuses on contextual factors and people's experiences
Weaknesses	- Generates sampling and non-sampling errors which means that the sampling frame may miss significant members of the population - Measures errors by identifying problems and references problems of determining welfare level - Misses what is not easily quantifiable and has a typically closed form - Fails to capture intra-household dynamics - High cost and the length of time	- Inability to generalise beyond the research area - Difficult to verify information - Insufficiently standardised to permit systematic aggregation and comparison - Lacks the quality of simple verifiability to trace back to the evidence

Source: Carvalho and White (1997), Appleton and Booth (2001)

3.2.2 Different ways of combining methods

There are many potential ways in which qualitative and quantitative methods can be combined for a poverty analysis. Carvalho and White (1997) identified three major ways to combine both methods[24] as described below in Box 1.

Box 1: Combining quantitative and qualitative approaches in poverty analysis

There are different forms in which the quantitative and qualitative approaches can be combined. Carvalho and White (1997) suggested three important ways as follows:

(i) *Methodological integration* of the two methodologies in which that the output of one approach feed into the design of another approach. This includes for example using survey data to identify representative individuals/ communities to be engaged by subsequent qualitative work or using participatory research to develop survey questionnaires.

(ii) *Examining, explaining, confirming, refuting, and/ or enriching findings* from one approach with that of the other. The results of different approaches conducted separately are put together in order to crosscheck or triangulate each other.

- "Explaining" entails the use of participatory research to identify unanticipated results from survey findings.
- "Confirming or refuting" entails the use of participatory research to ascertain the validity of survey-based research (or vice-versa);
- "Enriching" entails the use of participatory research to obtain information about variables and processes not obtained from questionnaire surveys;

(iii) *Merging findings* from the two approaches into one set of policy recommendations. Each approach is used independently but their findings can be used to enrich each other.

Source: Carvalho and White (1997)

[24] For a general discussion, the two main approaches commonly recognised in the literature are quantitative and qualitative, and while a participatory method is included in the qualitative approach, not all participatory methods may be considered to be in the qualitative category (Kanbur, 2003).

Shaffer (2006) suggests two forms of combining both approaches for poverty dynamic studies, the first of which is *'putting together'* in which the separate findings from the two approaches are concurrently put together with a view to enriching, confirming or refuting each other; for example, the analysis of a Participatory Poverty Assessment (PPA) and household survey findings of poverty trends in rural Uganda (McGee, 2000). This particular way is similar to the second form of combining proposed by Carvalho and White, as shown in Box 1. Ravillion (2003) also proposed a way of combining called *'simultaneous mixing'* in which the two methods are combined to triangulate each others' findings. This involves integrating qualitative methods with standard quantitative surveys; for example, by adding subjective qualitative questions or unstructured portions at the end of the survey questionnaire.

The second form is *'methodological integration'* or so-called *'sequential mixing'* in which both approaches are conducted sequentially. The results from one approach are fed into the sampling, design or methods of another. Some examples of sequential mixing include the use of a quantitative survey to select a qualitative sample, or case studies in ethnographic and life histories, or other kinds of participatory poverty studies. In some studies, the descriptive and econometric findings from a quantitative analysis are also used to design an interview guide for the qualitative work. A qualitative analysis can also be used to determine the questionnaire design for a quantitative survey. An example of a study that applies a sequential mixing method is the poverty dynamics study of Uganda undertaken by Lawson, Hulme and Muwongse (2007). They followed the sequential mixing of methods by using the results from a national panel survey to design life history interviews.

To help to understand how quantitative and qualitative approaches can complement each other, Adato (2011) compiled a wide variety of ways in which quantitative and qualitative methods support each other, as shown in Table 3.2 below.

Table 3.2: Complementary aspects of quantitative and qualitative approaches

Qualitative methods support quantitative surveys	Quantitative methods support qualitative approaches
- Identifying hypotheses - Identifying and testing topics, questions, response options, and local meanings of language for surveys - Determining the direction of causality - Identifying unanticipated issues - Making what is hard to capture by the quantitative approach or "unobservable" observable - Triangulating, confirming, challenging, and explaining the survey findings	- Identifying topics and questions for further investigation - Providing data for drawing a qualitative sample and a qualitative design - Providing background data of households, communities, and institutions - Comparing profiles of qualitative sample communities or households with broader populations to determine the degree of similarity or differences - Testing the generalisation of qualitative findings - Triangulating, confirming, and challenging qualitative research findings

Source: Adato (2011)

When combining quantitative and qualitative approaches, one can serve as the dominant method, while the other becomes subservient, or both methods can be equally combined. The classification is generally based on the amount of primary data collected. The most dominant method is the one that gathers the majority of the data. If the same amount of data is obtained from both methods, they will both be considered to be dominant methods (Sumner and Tribe, 2008).

Overall, depending on the sequential relationship and the degree of dominance of either of the methods, it is possible to combine quantitative and qualitative methods in many different ways. In order to choose which mix of methods should be adopted, the most important factors researchers need to consider are the purpose of the study and the function of combining the methods. Brannen (2005) suggests four functions of combination, namely (i) Elaboration or expansion ('the use of one type of data analysis adds to the understanding gained by another'). (ii) Initiation ('the use of the first method sparks new hypotheses or research questions that can be pursued using a different method'). (iii) Complementarities ('the data analyses from the two methods are juxtaposed and generate complementary insights that together create a bigger picture'). (iv) Contradictions ('simply juxtapose the contradictions for others to explore in further

research'). Moreover, other key factors include the availability of both money and time in order to best achieve the specific objectives of the research.

3.2.3 Advantages and limitations of combining methods for poverty analyses

A combination of quantitative and qualitative methods compensates for the weaknesses of each approach, and each method provides more value when it is used in a mixed-method design, providing more coherent, reliable, and useful information and conclusions than those derived from single-method studies (Adato, 2011). Appleton and Booth (2001) propose some advantages of combining methods, including achieving more robust findings, generating complementarities, and increasing the influence that either type of findings would have on their own. Creswell et al (2003) suggest that combining methods has three main advantages, the first of which is that it can offset some of the limitations of certain methods. Secondly, the findings from one method can be merged with those from the other to help to strengthen the study. Also, the findings from one method can help to design and inform the other. Lastly, a mix of methods is required for a better understanding, since the area of poverty studies is complex and multidimensional in nature. Hulme (2007) also agrees that a combination of quantitative and qualitative approaches could provide benefits and capture the strengths of both by identifying three potential aspects, including data quality, a deeper understanding, and more effective poverty reduction policies.

Researchers, practitioners and policy-makers have increasingly made several attempts to look for a way forward in the building of best practice using these two approaches for a poverty analysis. The benefits of combining the two main approaches for a poverty analysis have been revealed in many studies, particularly in several countries' poverty assessment reports by the World Bank, as well as empirical studies of poverty in many countries. One example is the case of Uganda. McGee (2000) emphasises that both approaches are compatible and complement each other well in that the quantitative approach has breadth and the qualitative approach has depth. According to her, *"one aspect of complementarities is that the UNHS provides breadth - a statistically representative picture of all socio-economic strata- whereas the PPA provides depth – investigating the phenomenon of poverty in detail"*. She claims that the

two approaches are not directly comparable because they refer to different dimensions of poverty; however, they are complementary in that qualitative research significantly adds to the understanding of how consumption poverty in Uganda, shown by the survey data from 1992 to 1996, declined. Some findings obtained from the participatory approach helped to clarify the results of the survey, as well as revealed additional processes and issues unable to be found from the national survey alone; for example, intra household allocation, gender issues, food security and vulnerability.

Temu and Due (2000) conducted a household survey to explain the ranking of well-being from a Participatory Rural Appraisal (PRA) of small farm households in Njombe, Tanzania. Their comparison of the results shows that the two approaches, the PRA and the sample survey, supported each other in describing the socio-economic situation in Njombe. The data added by the sample survey conformed to the well-being ranking. For example, those who were disadvantaged and remained in low well-being households generally had a low and inadequate labour force for farming, a much smaller quantity of land, low levels of enterprise diversification, low levels of education, and greater perceptions of food insecurity. Their results support the evidence that household surveys and PRAs could be combined for better results than if each one had been carried out independently.

Similarly, Howe and McKay (2007) also indicate the importance of combining insights from a nationwide participatory assessment undertaken between 1999 and 2001 and an integrated household survey carried out in 1991 when analysing chronic poverty in Rwanda. While the quantitative approach pointed to the significance of access to some key assets, namely, land ownership and human capital, as well as the extent of the diversification of economic activities when identifying the nature of chronic poverty, the qualitative analysis provided a broader understanding of the social processes that caused persistent exclusion or deprivation, as reported by individuals and communities. They demonstrated that qualitative and quantitative methods are consistent in that they complement each other in identifying the characteristics of chronically poor households, including for example, the inability to send children to school and lack of access to health care, low consumption expenditure, and low levels of agricultural production.

Nevertheless, while there is a growing acceptance of the complementary aspects of the two approaches, some concerns remain about the limitations of the trade-off of these two methodological approaches. One important concern is that differences in the philosophical and conceptual issues behind the two approaches may generate conflicting results rather than complementing each other, which would make these approaches incomparable. Kanbur and Shaffer (2007) identified some fundamental issues in terms of discipline and epistemology about the different important concepts of the nature of knowledge between the different approaches to poverty.

A number of empirical studies of developing countries have found large discrepancies between quantitative and qualitative approaches to poverty, which suggests that people identified as being poor according to income poverty do not always consider themselves to be poor according to a subjective poverty assessment (Laderchi, 1997, Jodha, 1998, Ravillion and Lokshin, 2002, Rojas, 2008, Caizhen, 2010). For example, the well-known study of Jodha (1998) on poverty in rural India provides evidence of the changes in poverty between two periods of time (1963-6 and 1982-4) by applying two different approaches. The results of his study showed that households that seemed to be poorer by conventional measures of income appeared to be better off when they were viewed by different qualitative indicators of well-being, such as less dependence on landlords and patrons, larger savings, more travel, and a wider and more varied diet. Ravillion and Lokshin (2002) applied a 9-step ladder, from poor to rich, to study the determinants of Russian people's perception of their economic welfare in a panel study. The results showed that there were large discrepancies between standard income-based measures and the subjective assessment of economic welfare. It appeared that about 60 percent of the poorest eighth adults in the sample in terms of household income relative to the poverty line did not place themselves on either the poorest or second poorest rung of the subjective ladder. While income was a significant predictor of the subjective assessment, subjective economic welfare was influenced by other factors, including health, education, employment, assets, relative income and expectation of future welfare. Self-rated welfare, however, has been criticized for biases that arise as a result of its subjective in nature and mood variability, and thus reponses can vary according to the time of the interview (ibid). Due to different concepts of

poverty, these empirical studies show that income poverty based on the quantitative approach is not expected to be strongly related to subjective poverty based on the qualitative approach.

3.3 Combination of quantitative and qualitative approaches in the study of poverty dynamics

The previous section generally discussed combining both approaches in a poverty analysis. This section particularly considers the application of a combination of qualitative and qualitative approaches to poverty dynamics. Given that the objective of poverty dynamic studies is to trace the same households over time, two key methodological approaches are specifically required. (i) A quantitative approach based on longitudinal or panel survey data, which can track the same households over different periods of time. (ii) A qualitative approach, based on information that captures the dynamic aspects of living conditions, including ethnographic and sociological methods, such as open-ended interviews with retrospective questions, life history interviews and participatory approaches (McKay and Lawson, 2002, Hulme, 2007).

As described earlier in Section 3.2.2, there are various ways of combining both approaches. It is apparent that most previous poverty dynamic studies applied the sequential methodological integration in which the results from one approach are feed into the design, sampling and methods of the other. It is widely argued that this sequential integration brings out the strengths of each method or the best from each end of the spectrum in order to take full advantage of their contribution to the overall study. The integration also can make the best use of the results obtained from the two approaches (Baulch and Scott, 2006, Hulme, 2007, Baulch, 2011).

While several analytical works have applied multidisciplinary approaches to poverty studies in general, the combination of quantitative and qualitative approaches in poverty dynamics in particular remains relatively limited compared to a number of static poverty analysis studies in general. The next step in furthering understanding to bridge these gaps in the knowledge is to find more specific details of lessons learned from particular empirical studies to gain more insight into the complementarities and difficulties involved in mixing the two approaches.

3.3.1 Review of studies using combined approaches

Some examples of work that has applied mixed-methods to poverty dynamic studies in developing countries are reviewed below.

Lawson, McKay and Okidi (2006) made one of the first attempts to combine the quantitative and qualitative approaches to identify the important factors of poverty dynamics in Uganda. They used participatory assessments to review the key factors that affect poverty transition and then analysed insights of the patterns and factors that influence poverty dynamics based on nationwide panel survey data in 1992 and 1999 and qualitative assessment carried out in 1998 and 2002. The study combined qualitative and quantitative approaches by first outlining the available qualitative evidence of the key factors and processes of poverty transition, and then identified factors using a quantitative analysis based on survey data. The evidence derived from both qualitative and quantitative methods generally confirmed or complemented each other. Many similar factors were identified by both approaches, including ownership of, or access to, assets and the dependency ratio as the key factors that influenced poverty dynamics. While the qualitative results provided less information about how households were able to move out of poverty, the quantitative analysis was more successful in identifying such factors. The quantitative approach assessed many factors simultaneously and awarded relative importance to those factors using a multivariate analysis. However, it also missed many factors; for example, gender relationships and the impact of excessive alcohol consumption on social and economic aspects. The qualitative insights also identified many additional contextual issues that were not identified from the survey; for example, social and political capital, such as poor governance, a culture of excessive drinking, and pervasive insecurity. This suggests that the combination of the two approaches added significant value and provided a better understanding of poverty dynamics than using either approach alone. However, it is worth noting that the quantitative survey and the qualitative assessment in this study were based on different sampling frames, which did not involve re-interviewing the same households.

Lawson, Hulme and Muwongse (2007) made another attempt to deepen the understanding of methodological issues, particularly the combination of both approaches to further understand the poverty dynamics in Uganda. They followed the sequential mixing of methods by using the descriptive and quantitative results from a survey to inform and design life history interviews in order to make the best use of the method complementarities. In this research, the same sampling frame of a household survey was applied in which the same households in the survey were re-visited for the life history interviews. However, the period of the quantitative panel data was not the same as that of the life history interviews, given that the re-survey period of panel data was six years prior to the time the life history process was undertaken. This is not considered to be an ideal case for the sequencing and triangulation of data since conducting interviews retrospectively may create some difficulty in terms of time referencing, and this may lead to unreliable results. Thus, it is recommended that the survey data should be collected within the same period as the interviews for greater reliability.

When Adato, Lund and Mhlongo (2007) combined qualitative and quantitative research to assess the dynamics of poverty in Kwazulu-natal, South Africa, they developed a participatory method called household event mapping[25] and sequentially combined it with the national panel survey data. The findings from quantitative surveys in 1993 and 1999 were used to select the qualitative sample for further in-depth interviews in 2001. This study presents the benefits of mixed methods research by providing some examples of what was added by the qualitative research that was unable to be captured by the survey. For example, this included a number of informal works that were missed by the survey. They explained that this was because the surveys only covered two or more points in time, while the qualitative interviews could capture the experiences that people may have had in the intervening years. The design of the survey questions also tended to focus on work in recent times, namely last month or last week. In addition, the qualitative findings provided more explanations of the impact of social relationships among family and neighbours on households' well-being.

[25] Household events mapping comprises the family tree, visual family histories and detailed stories to trace and explain the changes in household poverty status over time.

Davis and Baulch (2009) developed a sequential integrated methodological approach to study poverty dynamics in rural Bangladesh, in which they applied a longitudinal survey and life history interviews. The study showed how different methods led to different assessments of the socio-economic mobility of households, particularly movements into and out of poverty. The life history interviews were found to show fewer poverty transitions than the household survey, especially moves out of poverty. Moreover, the two approaches provided some contrasting findings of poverty transition. Different cases of mismatch between quantitative and qualitative poverty dynamics were also identified and some key ways for reconciling these differences were discussed. Five plausible explanations of the observed disagreements included considering assets to measure welfare, the proximity of household expenditure to the poverty line, the impact of non-monetary aspects of well-being, the impact of change in household size on diseconomies of scale, and qualitative recall errors.

While the complementarity of combining the two approaches has been revealed by the recent empirical evidence shown above, the practical limitations have also been discussed. Shaffer (2006) mentions some of the implications of combining a panel survey with life histories, one of which is comparability. In the identification and aggregation stage of a poverty analysis, comparability issues are an important drawback of combining participatory and quantitative approaches, whether the same dimension of poverty or well-being are used, and whether or not there is a common unit of welfare measure when making comparisons. Another issue is validity, since there can be measurement errors in a quantitative survey, as well as recall errors or perceptual biases associated with self-reporting in qualitative interviews.

Despite some limitations, there are increasing recognition of the potential benefits of combining the qualitative and qualitative approaches, and scope for further strengthening the links between them. The key to combining both approaches is *'how to make the best of the complementarities while minimising the tradeoffs'* (Kanbur, 2005). In addition, it is most important that the combining method should be primarily driven by the purpose of the study.

3.3.2 Combining quantitative and qualitative approaches to understanding poverty dynamics in Thailand

Clearly, no single method is best suited for capturing the essential aspects of poverty. As shown in the previous discussions, identifying the benefits and pitfalls of methodological integration in the analyses of poverty and poverty dynamics is still in its infancy and needs to move forward. Therefore, this study attempts to illustrate the value added by a mixed-method approach in terms of understanding the dynamics of poverty among rural households in Thailand, as well as exploring the implications of using two different approaches to study poverty dynamics. To my knowledge, this study is one of the first attempts to apply mixed methods by collecting its own dataset from the same household sample.

One of the key research objectives of this study is to triangulate the findings from a quantitative approach with those from a qualitative approach, as well as understanding how qualitative life history interviews can help to enrich the findings of a quantitative survey analysis. Therefore, to achieve this key objective, two phases of the sequential integration between quantitative and qualitative methods for the same households at both the data collection and data analysis stage were adopted in this study (see Table 3.3).

Firstly, the quantitative survey is merged with a qualitative assessment by using the same sampling frame. The qualitative research method is simultaneously integrated into the quantitative survey by incorporating open-ended questions at the end of the survey questionnaire to the same 240 households. The integration lies in the fact that the findings from the qualitative approach are used to triangulate and explain the survey findings in order to verify whether the findings from both approaches confirm or refute each other. The aim is to examine the extent to which these two different approaches provide similar or different results of poverty dynamics and ultimately lead to similar or different policy implications. It is difficult to further inform the debate and implications of methods for analysing poverty dynamics without a comparative analysis of the two approaches taken in the same location with the same households.

Secondly, the quantitative research method is based on household survey data sequentially integrated with the life history interviews. More specifically, a sequential integration was conducted by using a household survey to identify sub-sample groups for the qualitative interviews. In this research, the same households in the survey were re-visited for the life history interviews. This is consistent with the suggestion of Adato (2011), shown in Table 3.2, that quantitative results could be used to select a qualitative sample. In addition, while the panel survey is expected to generate data to identify a pattern of poverty dynamics, the findings of the life histories are expected to provide more detailed information and additional insights into households' experience, especially the processes that underpin poverty change, which are unable to be observed by the survey but are directly experienced by local people. A life history can also provide the experiences households may have between the study intevening periods rather than only looking at some points in time like a panel survey. The sequential integration method of this study closely follows the study of poverty dynamics in rural Bangladesh conducted by Davis and Baulch (2009).

Table 3.3: Stages of combining quantitative and qualitative methods

		Phase I Simultaneous mixing	Phase II Sequential integration
Stage of research process	Data collection	A qualitative self-rated poverty dynamic method is undertaken using the same 240 sampled households by incorporating open-ended questions at the end of the survey questionnaires.	The results of the poverty transition matrix from the panel survey are used to identify the sub-groups for 24 case studies for the life history interviews
	Data analysis	The findings of the qualitative self-assessments are compared with the findings from the quantitative survey.	The life histories interviews are used to explain some additional contextual factors and causal processes that cannot be captured by the survey variables.

Source: Adapted from Sumner (2008)

3.4 Quantitative methods

One of the most important means to understand the nature of poverty dynamics is considered to be longitudinal or panel data that traces the same individuals or households over a period of time. In this study, the data for analysis is drawn from a repeat questionnaire survey of the same households in rural villages in two regions of Thailand, the Central plain and the Northeast, between the two reference years of 1988 and 2009.

3.4.1 Source of data

Following the matching process, the analysis developed in this paper is based on a total sample size of 240 households matched for 1988 and 2009 two wave panel datasets. The full sample size was 295 households in the original 1988 survey; however, the number dropped to 240 households in the 2009 sample.

(1) 1988 original panel data

The benchmark survey was was sponsored by the International Rice Research Institute (IRRI), and initially implemented in 1988 by Isvilanonda and Wattanutchariya, professors from Kasetsart University in Thailand. The main purpose of this survey was to analyse the impact of the adoption of modern rice technologies on farm households' income by comparing different production environments and favourable and unfavourable ecological areas. The sample in the 1988 survey was drawn using a stratified random sampling method with the stratification based on the proportion of farm size and tenure arrangement patterns (Isvilanonda and Wattanutchariya, 1994). The total sample size in the original 1988 survey was 295 households.

(2) 2009 re-survey panel data

The second wave of panel data was collected in the field work conducted by the author at the end of March to July, 2010. Thus, the data covers the wet season of 2009 (May-October 2009) and the dry season of 2010 (November 2009-April 2010). This was consistent with the period of the original 1988 survey, which was conducted during the wet season of 1987 and the dry season of 1988. Details of identification and

representativeness of the sample households between both survey periods will be further discussed later in Chapter 4.

3.4.2 Survey locations

The 1988 orginal data were taken from the intensive survey of six villages in two major rice-growing provinces of Thailand, Suphan Buri in the Central Plain and Khon Kaen in the Northeast representing commercial and traditional rice growing production areas respectively. Both provinces were selected to represent their regions since they have similar high proportion of rice growing areas of about 65 percent to total agricultural area according to the data in 1988.

The first province is Suphan Buri[26] in the Central plain, which has a generally favourable production environment since it is located in the heart of a fertile basin that covers the low alluvial plain of the Chao Phraya River, the main river of Thailand. In addition, Suphan Buri also represents the commercial rice production region in Thailand due to such favourable rice growing conditions, a substantial irrigated area, and a good location only 100 kilometres from Bangkok, the Capital of Thailand, which gives it a good access to market. The second province is Khon Kaen in the Northeast of the country, which is located about 450 kilometres from Bangkok. The province covers an arid area with poor soil fertility and unpredictable rainfall patterns. This makes Khon Kaen a relatively unfavourable production environment compared to Suphan Buri, and represents the traditional rice- growing area in which farmers grow a single rice crop, mainly for their own consumption.

Six sample village sites were selected in these two provinces to represent the difference in the production environments and agro ecological conditions between the villages. Wang Yang, Sa Ka Chome and Jora Khae Yai were selected in Suphan Buri, representing irrigated, rain-fed and flood-prone environments respectively. Ban Koak, Ban Kaina and Ban Meng represented irrigated, rain-fed and drought-prone

[26] Of all the provinces in the Central plain, Suphan Buri was ranked the second in the country in terms of average rice production to total growing area. In 2009, Suphan Buri produced more than 700 kilos of rice per Rai while Khon Kaen only produced half or about 300 kilos of rice per Rai in spite of having double the size of Suphan Buri's growing area (Department of Land Development, Ministry of Agriculture and Corporative, 2010).

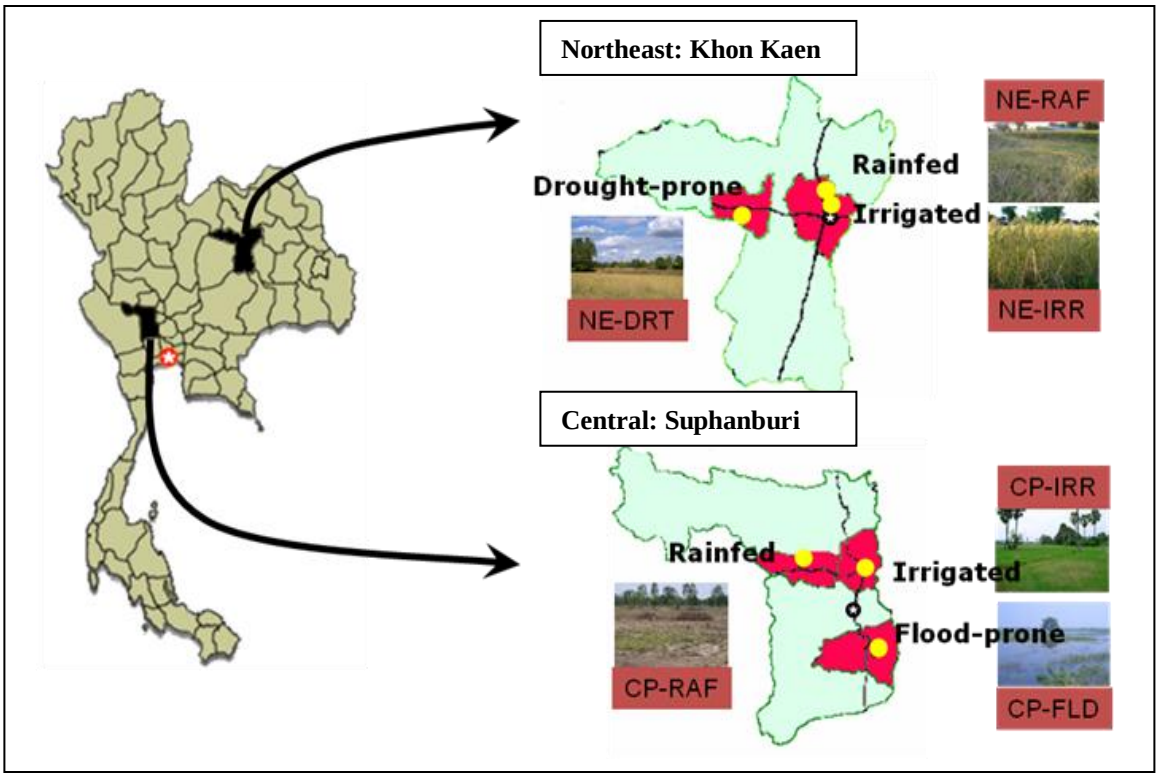
environments respectively in Khon Kaen (see Isvilanonda and Wattanutchariya, 1994). Key basic information of both provinces and all studied villages are shown in Appendix 1.

Table 3.4: Studied villages

Region	Province	Irrigated	Rainfed	Flood/drought-prone
Central	Suphan Buri	Wang Yang Village (Amphur Sriprajan)	Sa Ka Chome Village (Amphur Donchedi)	Jora Khae Yai Village (Amphur Bangprama)
Northeast	Khon Kaen	Ban Koak Village (Amphur Muang)	Ban Kaina Village (Amphur Muang)	Ban Meng Village (Amphur Nongrua)

Note: In parentheses, Amphur is a Thai word suggesting the name of the district in each province

Figure 3.1: Survey location of studied villages



3.4.3 Quantitative survey data analysis

A number of different quantitative methods were adopted in this study in order to understand the nature and factors associated with poverty dynamics. There are two main stages of a poverty dynamic analysis, namely, identification and causal stages.

(1) **The identification stage** involves an analysis of the patterns of poverty dynamics. Two main methods were adopted to identify the patterns of poverty dynamics following the early studies of poverty dynamics in developing countries (Baulch and Hoddinott, 2000, Mckay and Lawson, 2003).

(1.1) Firstly, *'the spells approach'* counted the number or length of periods (spells) of poverty experienced by households. Normally, this method is based on measuring income or expenditure and comparing it to the poverty line. Under this approach, poor households are classified into chronic/always poor (households that experienced poverty in all periods of the study), transient/sometimes poor (households that experienced poverty in at least one period of the study) and never poor (households that never experienced poverty in all periods of the study). Most of the available household survey data using this method generally consists of panels with two waves.

(1.2) Secondly, *'the components approach'* distinguishes the permanent component of a household's income or consumption from its transitory fluctuations around that permanent level. The chronic poor are households whose permanent component is below the poverty line. However, this method requires multiple waves of panel data.

This study consisted of two waved panels, 1988 and 2009. Therefore, the spell method was used to identify the poverty dynamic patterns. Following the spell approach, a transition matrix analysis was applied by classifying households into four dynamic categories[27]. Firstly, the chronic poor are households who were poor in both 1988 and

[27] Jalan and Ravillion (2000) classified poverty into four groups in order to examine the differences between transient and chronic poverty, which are (a) persistently poor, (b) not persistently poor, (c) transiently poor, (d) never poor. Hulme, Moore and Shepherd (2001) propose categorising households into five dynamic poverty groups, namely, (a) always poor, (b) usually poor, (c) churning poor, (d) occasionally poor, and (e) never poor. However, based on the two wave dataset, the spell approach is normally used, which classifies households into four main poverty transitional statuses, with the two polar categories of always poor and never poor and two intermediate categories of the sometimes poor, who are those who can escape from poverty and those who enter poverty. It is assumed that the poverty dynamic of a household is represented by a straight line connecting the levels of poverty between two periods. This

2010; secondly, the moving out of poverty are households who were poor in 1988, but were non-poor in 2009; thirdly, the moving into poverty are households who were non-poor in 1988 but were poor in 2009, and fourthly, the never poor are households who were never poor in both 1988 and 2009.

(2) **The causal stage** involves the determinants of socio-economic mobility to examine the causes or factors associated with poverty dynamics. This study applied the two most common methods for poverty dynamic studies, namely, a descriptive analysis and an econometric analysis.

(2.1) The descriptive analysis of each dynamics group was based on the fundamental socio-economic characteristics of households and their key asset endowments (see for example Sen, 2003, Kabeer, 2004, Hossain, 2009). To maintain comparability, the re-survey in 2009 was conducted to collect the same information from the same households as in the 1988 survey. By using questionnaires, the key aspects of the socio-economic characteristics of households, as well as the key household assets obtained from the panel survey, include demographic characteristics (household size and household composition), education (years of education) and employment, land asset (land ownership, tenure arrangement status, cultivated and irrigated area), physical capital (agricultural and non-agricultural assets, income source, and shocks (death of household heads, death of household members, illness, natural disasters, migrants).

(2.2) An econometric analysis for modelling poverty dynamics generally consists of two forms, discrete and continuous regression models (Lawson et al., 2006). This study also adopts both discrete and continuous models.

(i) The model of a discrete dependent variable normally measures the dynamic poverty status as the dependent variable. This study adopts a multinomial logit and probit regression model. It is argued that this discrete modelling approach is the most commonly-used for modelling poverty dynamics since it enables the identification of the more prevalent characteristics within each poverty category (Baulch, 2011). Nevertheless, the discrete model is faced with some criticism. The multinomial logit

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classification of four dynamic categories has been commonly used in most empirical studies of poverty dynamics (see for example Sen (2003), Kabeer (2004), Lawson, McKay and Okidi (2006), Krishna (2006), Baulch and Davis (2008), Hossain (2009)).

model depends on the dependent variable, which distinguishes households into four dynamic categories according to the transition matrix using a poverty line cut-off. This suggests a disadvantage caused by the issue of which poverty line to use, as well as a significant loss of information about households' welfare variable, either income or expenditure. This is also similar to bivariate poverty probits and logits that are criticised for reducing a continuous variable to two discrete categories, i.e. poor and non-poor (Ravillion, 1996). In addition, the multinomial logit model is predicted on the assumption of the independence of irrelevant alternatives. According to Greene (2003), the independence of irrelevant alternatives assumption states that the odd ratio for one category in the multinomial logit model is independent of the other odd ratios for other categories. The multinomial logit model also applies unordered categorical outcomes that do not take the natural order of poverty dynamics into account (Baulch, 2011). One potential way to avoid these limitations of discrete models is to use a second model, a continuous variable approach, to understand the determinants of household welfare change.

(ii) The model of continuous dependent variable measures changes in household welfare, such as income or expenditure based on a panel regression estimation. A major advantage of the continuous variable approach is that it is less sensitive to the level at which the poverty line is set (Ravillion, 1996). Moreover, it takes wo sets of factors into account, namely, the initial conditions and change in variables over the period that affects the household welfare. For example, households that move out of poverty may be affected by factors that made them poor in the first period, and/or by changes in the environment over time that helped them to move out of poverty. The findings from the descriptive analysis are expected to provide a preliminary hypothesis of the factors to be used as exogenous variables in the model.

3.5 Qualitative methods

For this research, the qualitative methods were firstly simultaneously mixed with the quantitative survey questionnaires, which incorporated self-rated questions at the end of the survey. Then, in the second stage, the qualitative methods were sequentially integrated with the quantitative method by adopting the same sampling frame of the quantitative survey data to select the cases for the life history interviews. Twenty four of the surveyed households were purposively selected for these interviews.

Following the qualitative methodological approach, a package of tools was obtained to collect the qualitative data from the sample village sites. The qualitative research used for the study comprised two main methods, namely, self-rated poverty dynamics methods and life history interviews.

3.5.1 Self-rated poverty dynamics

The adopted qualitative method initially involved a subjective perspective or self-rated assessment of poverty and poverty dynamics following the poverty-self-rating approach (Mangahas, 1995, Ravillion and Lokshin, 2002). The key objective of applying this method is to understand poverty from local people's perception; for example, whether or not they see and define the term 'poverty' as being similar to the income-based measure of poverty, and if not, what dimensions of poverty are found significantly different. The identification of the dimensions of poverty is particularly of interest and has long been a challenging issue in the theoretical discussion of poverty studies over decades. Many researchers have put all their efforts into developing analytical and methodological approaches to thoroughly understand the complexity of poverty, both from the research perspective and also poor people's own views (Narayan et al., 2000, Spicker, 2007). However, only a relative few studies have been able to provide a deeper understanding of poverty transition or poverty dynamics on the basis of people's perception of their changing poverty status and the changing life conditions they have experienced (see Bird and Shinyekwa, 2003, Kabeer, 2004, Krishna et al., 2006, Kristjanson et al., 2009, Davis and Baulch, 2009).

Thus, in order to fill this gap, it is essential to examine the patterns of poverty dynamics based directly on local people's perception of how they perceive the changes in their poverty status over time. The method used in this study borrows parts of the poverty level classification and the Stage-of-Progress method developed by Anirudh Krishna, Professor of the Sanford School of Public Policy at the Duke University. It is believed that a better understanding of poverty learned from local people's own reality can contribute to the provision of more effective poverty reduction policies (Krishna et al., 2006, Kristjanson et al., 2009, Krishna, 2010a).

In this study, the self-rated poverty dynamic method was undertaken at household level by distributing a survey questionnaire with open-ended questions incorporated at the end to a total of 240 sampled households. The following five key steps were taken to examine local people's perception of change:

Step I. Defining poverty: The objective of this step was to understand the concept of poverty by listening to local people and learning from the reality of their lives. The first stage of the exercise was undertaken at household level by asking all the sampled households open-ended questions incorporated in the questionnaire survey. Households[28] were firstly asked to articulate their ideas and their own understanding of poverty, by answering key questions, namely, '*How would you define poverty?' 'What do you think poverty means?'*

Step II. Classifying life conditions and poverty status: In the following step, the living conditions of each household were assessed to determine how the household heads classified their poverty status and how they would describe the characteristics of each category as they understood them. The key questions in this step included *'How would you characterise or differentiate each poverty status (poor, medium, rich)?' 'What do you think are the main characteristics of each poverty status?'*

[28] In order to be consistent with the original survey, household heads were interviewed as representatives of the household. Household heads were taken as those who resided in the same household in both survey periods in which that about 52 percent of them were still the same household heads.

Step III. Examining patterns of poverty dynamics: In this step, the household heads were asked to evaluate their poverty status in 2009 compared with the first study period in 1988. They were also asked to cite the reasons for any changes in their poverty status and household living conditions between 1988 and 2009. The questions in this section were designed using similar types of questions as those in the Economic Welfare Question (EWQ) developed by Ravallion and Lokshin (2002), the public opinion research undertaken in the Philippines by Mangahas (1995) and the Eurobarometer by the Commission of the European Communities. The key questions included *'Consider the poverty status classifications (e.g. poor, medium and rich); which category do you think your household is in today?' 'Which category do you think your household belonged to twenty two years ago (in 1988)?' 'Which category do you think your household currently belongs to (in 2009)?' 'How do you explain the change in your household's poverty status over time?*

Step IV. Assigning households to particular poverty dynamic categories: Based on their poverty status each year according to the interviews, each household was assigned to one of four categories: chronic poor, moving out of poverty, moving into poverty and never poor. At this stage, the results of the self-rated poverty dynamics for all sample households were examined in order to compare with the dynamic outcomes obtained from the quantitative analysis in section 4.6 of Chapter 4.

Step V. Ascertain the reasons for the change in poverty status: The in-depth interviews aimed to provide a better understanding of the process and dynamics of poverty based on local people's perspectives. The key open-ended questions particularly focused on why the households had experienced each trajectory pattern and the factors associated with dynamic categories over time. Basically, in-depth queries were made to answer the key research questions, including identifying the factors that enabled households to experience the four categories of poverty dynamics (moving out of poverty, moving into poverty, remaining poor and remaining non-poor). The key questions applied at this stage included: *Have there been any significant changes in your household's poverty status and life conditions? If so, what were those changes and what do you think mainly caused them? Please elaborate more about the major causes,*

contributory factors or problems you think related to the changes in your household's poverty status.

3.5.2 Life history interviews

There has been increasing interest in researching poverty dynamics using qualitative methods, particularly life history interviews together with quantitative methods (Davis, 2006, Lawson et al., 2007, Davis and Baulch, 2009). A combination of quantitative and qualitative methods is also applied to poverty dynamics research in this study, which began with a quantitative method using panel survey data and then qualitative work was subsequently applied. The selection of households for life history interviews was purposely random based on the dynamic group in the panel sample. Given that the data had already been collected in the original survey in 1988, it was possible to undertake a panel data analysis of the two wave panels that examined the patterns and key factors associated with poverty dynamics. The results from the quantitative analysis were then used to design the subsequent life history interviews of selected households. At the same time, life history interviews were also used to examine the relationships derived from the quantitative data in order to obtain an in-depth understanding of factors that may have been missing or been added. The adoption of life histories provided an opportunity to obtain information about households that happened during the study period and critical factors identified by local villagers as being important, but which were not included in the questionnaire (Lawson, Hulme and Muwonge, 2007). The micro-level information and experiences obtained from the life history method were expected to broaden and supplement the knowledge gained from the quantitative results.

Twenty four of the surveyed households were selected to represent the experience of poverty dynamics. In line with the aforementioned income poverty dynamics shown in Section 4.6, four households in each village were randomly selected as representatives of each of the four poverty dynamic categories: (i) moving out of poverty, (ii) moving into poverty, (iii) chronic poor, and (iv) never poor. A total of six villages were studied; therefore, at this stage of the qualitative work, twenty four households were interviewed at greater length using life history interviews. In each

household, the household head and spouse were targeted for interview to represent the household. However, if there was only one parent left (for example, in the case of a widower), a second respondent in the household was asked to join the interview (for example, a widow and her son or daughter) in order to verify the information provided by the respondents. Interviewing the household head and other members simultaneously gave the entire picture of the household's living conditions. It also enabled an immediate cross-check to be made and provided an alternative view of household dynamics. I considered this to be a good way to triangulate the quality of the information obtained. Each household was interviewed for between two and four hours every day on average. Notes were taken at all the interviews, as well as digital recordings, with the permission of the respondents. Only one interview was conducted each day to allow time to draw a diagram and write up the notes on the same day. However, it was not possible to finish the interview on the same day in the case of 12 households, so I had to go back the following day for another session, depending on their availability.

Since I had spent approximately one and a half months conducting the quantitative survey in each village, household members and villagers had become used to me and felt comfortable to welcome me into their homes and tell me about their lives during a longer qualitative interview this time. I approached each household by knocking on the door and asking for interviews without having to be introduced again by the volunteer person.[29] In fact, some households even told me that they felt I was already a member of the family. It is worth noting that building trust between researchers and villagers as respondents is considered to be one of the most important factors of successful interviews. When doing research in Thailand, particularly with rural people, it is essential to achieve a level of trust with them in order to prove the validity of the information. This is because most Thai people are normally reluctant to open up and talk and share information with outsiders or strangers they do not know well, particularly when discussing family-related issues. In addition, I was aware of the cost of the research to the interviewees, particularly in longitudinal research where the same households were approached repeatedly. Therefore, I normally visited them during

[29] The Thai professor, Assistant Professor Somporn Isvilanonda, who conducted the original survey in 1988, has a good long relationship with the local people and he kindly introduced me to some villagers who voluntarily helped to introduce me and took me to visit all the households in the village.

the afternoons or evenings when they had come home from work or their farms, or whenever they said it was the best time for them. I tried not to invade their normal working time by finishing the interviews within three to four hours each day. In addition, I also brought them some food or snacks to show my appreciation for the time they spent being interviewed.

The key objective of the interviews was to learn about their life history, focusing on the important life events they had experienced during the study periods in order to understand the reasons or factors that caused them to move into and out of poverty. The interview began by initially asking general questions *(e.g. How is life these days? What is your household's condition?)* simply to start the conversation without being formal and to help the respondents to feel comfortable and secure to tell me their life stories. I then moved to the next questions by focusing on the time period so that they would realise that I needed more details about the family's history at specific times. *(e.g. Would you please tell me the history of your family, what your family has experienced? Please start with the story of your life from childhood until today. There may have been high points and low points, good times and bad times, and so on; would you please share those key events with me?)* These included particular moments set in a particular time and place, complete with particular characters and actions, as well as thoughts and feelings. I found that sharing their childhood experiences was a good way to obtain a more nuanced picture of their life events, especially those of old people.

At this stage, I discovered that it was difficult to use years as a reference for the interviews because most local people could not remember exactly what happened in what year. (e.g. if I started by asking them 'what happened in your life in 1988?' most local people could not give me an immediate answer). However, their birthdays, ages, year of marriage, births or deaths of their children were found to become good timescale benchmarks to help refreshing their memories. I soon realised that it was better to start by referring to the history of the household, such as the year they were born, the year they were married, the year they gave birth to their children, the year of major events in the village etc. With their memory of different years refreshed, they were able to tell me about the process of their lives and when the key events occurred.

Retrospective studies based on life history interviews are potentially useful that can help examine reasons for moving into and out of poverty. However, it is also important to recognise the limitations and difficulties that are involved. I realised the diffulties of getting people to recall back to 1988. In order to help people to remember, I also developed a chronological template. including the history of the country (e.g. years of each government administration, major floods, droughts) and the history of the village (e.g. years of each village head, first road construction). This template provided a set of benchmarks that helped to situate the household interviews, as a way to identify timescales related to the important events and cycles in the lives of individual interviewees. When establishing the timescale template, I was guided by the village head and old people who had lived in the village for a long time and knew its history well.

During the interviews, the timeline of overall life condition was drawn together with the help of the interviewer. At this stage, I adopted the life history template from the work of Davis (2006), in which the vertical axis indicates people's perception of their poverty status and well-being, while the horizontal indicates the time span. The level of life condition (or 'thana kwam pen yuu' in Thai, translated as 'living status') is shown at different points in time along the life trajectory template. This research aimed to compare poverty dynamics between two periods of time; therefore, the respondents' condition of life in the 2009 survey was compared with the time of round one of the original survey in 1988. In this way, it was possible to triangulate the findings from the qualitative assessment with the quantitative analysis of poverty transition for each household.

3.6 Conclusion

This chapter has described the use of a combination of quantitative and qualitative approaches. It has mainly discussed the concepts, different ways of combining, as well as the advantages and limitations of combining these two approaches. The chapter has argued that combining qualitative and quantitative

approaches is useful in poverty dynamic research, since it utilises the complementarities between the two approaches, as revealed in a number of previous studies.

An application that combined and sequenced quantitative and qualitative methods of poverty dynamics in Thailand was developed to achieve the objectives of the study. The methodological integration of these two approaches was done in two stages. Firstly, the qualitative method was initially combined with quantitative survey questionnaires with self-rated questions incorporated at the end to interview the same households. The reason for integrating these two approaches was to enable the findings to be triangulated to determine whether they confirmed, complemented or contradicted each other. In particular, this study attempted to systematically compare the outcomes of poverty dynamics between income poverty based on the survey and self-rated poverty based on qualitative interviews with the same households. Secondly, at the second stage, the qualitative method was sequentially integrated with the quantitative method in which the same sampling frame of the quantitative survey data was adopted to select case studies for the life history interviews. This was done to better understand how qualitative life history interviews can help to enrich the knowledge gained from the quantitative survey analysis especially information and key events occurred in the periods between the surveyed years.

Lesson learned from combining the quantitative and qualitative approaches in this study could help to enlighten the understanding of poverty dynamics. While the quantitative approach generates essential data to identify the pattern of changes in poverty, the qualitative approach provides a more in-depth explanation of why these changes occur. The qualitative approach not only uncovers the multi-dimensionality of poverty, including the perception of local people, but also provides additional insights, including contextual factors and unanticipated issues and processeses that reflect the complex reality of people's experience of poverty, which is hard to capture using the quantitative approach. The findings from both approaches are expected to complement each other. The implications of combining these two approaches in this study will improve the level of understanding and contribute to the advance of applying multidisciplinary approaches to the study of poverty dynamics so that poverty alleviation policies can be more effectively informed.

CHAPTER 4

Nature of poverty dynamics: Results of the quantitative analysis

4.1 Introduction

Thailand has experienced a remarkable reduction in poverty over the past two decades. High economic growth and large development efforts aimed at eradicating poverty has resulted in a considerable reduction in the poverty headcount ratio from over 40 percent in 1988 to 8 percent in 2009. While the number of poor people in Thailand declined from 22.1 million in 1988 to 5.3 million people in 2009, the reduction in poverty rates was not uniform across the country (World Bank, 1996, Warr, 2004). While 70 percent of the entire population in 2009 were found to live in rural areas, about 90 percent of the poor were considered to be rural poor. In terms of geographical regions, more than half of the poor reside in the Northeast, while less than 10 percent of them live in the Central plain. The trend suggests that rural poverty in all regions remains a key challenge in Thailand, given the large regional disparity in terms of the poverty reduction performance between the Northeast and Central regions. Therefore, this study focuses on these two regions.

The question of the factors that contribute to sustainable poverty reduction is of particular interest to researchers and policy-makers in Thailand. However, previous empirical investigations of poverty in Thailand have tended to focus on the incidence of poverty at a particular point in time. This is largely due to the available data being based on household surveys at the country level. Such studies have been able to exhibit the poverty profiles and important socio-economic characteristics of the poor. (see for example World Bank, 1996, World Bank, 2001a, Deolalikar, 2002b, NESDB, 2011). These poverty studies normally analyse the general characteristics of people considered to be poor and compare their poverty profile between different years to see the trend over time. However, although poverty profiles can provide a good overview in terms of identifying the poor and their characteristics, they are not sufficiently effective to

explain the proportion of people who move into and out of poverty, and why some people escape from poverty over time and others do not. Thus, if poverty incidence rates are observed to increase, it is hard to know if this is due to the fact that there are new poor joining the existing poor, or if this is net outcome of a dynamic process in which a larger number of existing poor have been successful in moving out of poverty compared to those non-poor who have move into it (Grootaert et al., 1995).

Therefore, this research aims to study the long-term mechanism of poverty dynamics at the household level in the rural villages of the Northeast and Central regions of Thailand by identifying the dynamic patterns of poverty and the underlying factors associated with poverty dynamics or how people move into and out of poverty. As described earlier in Section 3.4 of Chapter 3, the analysis in this paper is based on empirical panel data from a survey carried out in 1988 with a re-interview of the same 240 households in 2009 in the two most populated and major rice production regions of Thailand, namely, Khon Kaen province in the North-eastern region and Suphanburi in the Central plain region.

The chapter provides a quantitative analysis based on descriptive analysis by applying data from the surveyed villages. The chapter is organised in several sections, the first of which contains a description of the source of the data and the sampling framework. The second section explains the changes in the characteristics of the sampled households, as well as the changes in their key household assets, including education, occupational, land ownership, changes in physical assets and financial assets. The third section provides information about the composition and changes in household income, while the fourth section describes the changes in poverty and the dynamics of poverty by presenting some poverty transition matrices. The fifth section illustrates the key characteristics of households in each poverty dynamics status, and the final section contains patterns of income mobility and income distribution.

4.2 Identification of households in the 2009 survey

4.2.1 Size of sampled households in the survey

A re-survey of a longitudinal survey is challenging, particularly after a gap of more than twenty years (Dercon and Shapiro, 2007). According to the nature of a re-survey, the identification of the households is considered to be a key process for tracking households on a longitudinal basis. The first stage of identifying and ensuring that the panel households re-surveyed in 2009 were the same as the original households in 1988, was to match the name, family name, sex and age of the household head, the home address, as well as the farm characteristics recorded in the original survey. The next stage was to look further at those households whose head had changed over the survey period; for example, whether the original household head had died and another member had become the new head. In such cases, it was essential to check that the current household head, referenced by age and sex, was also a member of the same household in the previous survey period.

Deaton (1995) states that '*such surveys typically collect data on a household basis- a household usually being defined as a group of people who share the same "cooking-pot" - and ask how much was spent over some reference period on a lengthy list of consumption items; the reference period can be anything from a day to a year*.' The definition used for a household in this study also follows this definition and was adopted from the original survey in order to maintain consistency of the data. A household includes members of the same family who have shared living and eating arrangements for more than six months prior to the survey date (Isvilanonda and Wattanutchariya, 1994). In addition, the households considered to be part of the panel must have the following features: (1) The household head[30] in 1988 was alive in 2009 and the household was intact. (2) The household head in 1988 was alive in 2009, but all the household members had not stayed together. (3) The household head in 1988 was

[30] The head of the household was still alived and remained the same in 2009 as in 1988 in about 54 percent of the households re-surveyed.

dead in 2009, but the current household head was a member of the households in 1988 and the rest of the household members were intact.

It is worth to note that the task of identifying the households would have been much more difficult without a great deal of help and guidance from the village head and other local villagers, especially elderly people. One of the distinctive characteristics of households in Thai rural villages is that they have a very close relationship within the village and they know each other sufficiently well to assist with identifying and matching all the households on the survey list. Moreover, Assistant Professor Somporn Isvilanonda from Kasetsart University in Thailand, one of the Thai professors who conducted the original survey in 1988, has fostered a good long-term relationship with the local people and he kindly drove me to all three village areas in order to introduce me to some of the villagers there. Because of the kind assistance from these volunteers, it was not a difficult task for me to locate households and approach them for an interview. Whenever I arrived in each village, these volunteer villagers showed me the location of each household. They also brought me along to visit every household and helped to introduce me to get to know each household. Due to the good coordination of these volunteers, none of the household refused to be interviewed for the survey. Thus, the response rate covered all the sample households in the panel.

Following the matching process, the analysis developed in this paper is based on the sample size of 240 households matched for 1988 and 2009 two wave panels. The full sample size was 295 households in the 1988 original survey; however, the number dropped to 240 households in the 2009 sample (see Table 4.1). This is because 55 households could not be matched and were not interviewed in 2009 due to many factors. 15 households could not be traced because of missing information in the original survey. An additional 40 households could not be re-surveyed due to their out-migration from the study sites[31] and the death of the household head and all household members. This means that the coverage of the panel survey accounted for about 81.4 percent of the total sample households in the original survey, or 18.6 percent of attrition losses.

[31] Households that had moved to other villages or other provinces were not considered in the present study since the aim was to include only households residing in the same place as they had in 1988.

Table 4.1: Sample size by village

Numbers of households	1988 Total Households	Not enough information	Could not contact		2009 Surveyed	% Coverage
			Out-migrants	Death		
Total	**295**	**15**	**12**	**28**	**240**	**81.4**
Central plain	**142**	**7**	**9**	**19**	**107**	**75.6**
- Irrigated (Thoongchana)	*45*	*0*	*2*	*6*	*37*	*82.2*
- Rainfed (Nongsaladdai)	*56*	*7*	*2*	*7*	*40*	*71.4*
- Flood-prone (Jorrakheyai)	*41*	*0*	*5*	*6*	*30*	*73.2*
Northeast	**153**	**8**	**4**	**9**	**133**	**87.0**
- Irrigated (Koak)	*49*	*0*	*0*	*1*	*48*	*98.0*
- Rainfed (Kaina)	*54*	*5*	*1*	*2*	*46*	*85.2*
- Drought-prone (Meng)	*50*	*3*	*2*	*6*	*39*	*78.0*

Source: Data from the survey

4.2.2 Representativeness of sampled households in the 2009 survey

In a longitudinal study in which the data is collected at two or more points in time and often many years apart, it is common for some households to be dropped from the study. In this case, 18.6 percent of the original 1988 sample was dropped, and this level of attrition is not surprising when considering that the survey needs to follow households for a period of more than twenty years. It should also be recognised that the panel data set ages and becomes less representative over time. Moreover, this level is not unusual when compared with other empirical works in developing countries (Alderman et al., 2000, Thomas et al., 2001, Dercon and Shapiro, 2007). Alderman et al. (2000) summarised the rate of attrition in a number of longitudinal data sets from seven different developing countries and found that it varied widely, ranging from 6 to 50 percent between two rounds of surveys.

One of the major concerns in panel data literature is that the sub-sample may not be a good representative of the original sampled households. It is possible that estimates may be biased if the households that are dropped from the study are different from those that remain (Thomas et al., 2001). In order to assess the selectivity bias of attrition in the

sample, two kinds of methods were applied to identify which variables predicted attrition. Firstly, a simple descriptive data analysis of household characteristics was undertaken by comparing the variable means between the panel households and the ones that could not be re-surveyed. Secondly, a probit regression analysis was conducted in order to assess which variables predicted attrition and determine if there might be some statistical significant difference between the two groups.

Table 4.2 below shows the means of the main household characteristics in 1988 between the matched panel that were successfully traced and re-interviewed (n=240 households) and the households that were dropped (n=55 households). Although the average per capita income of the panel households is slightly lower than that of the dropped households, the difference between the groups is not statistically significance. In terms of other household characteristics, there are also no other significant differences from zero between the matched and the dropped households, except for the education level of working members, which has a statistical difference at the mean level of 5 percent.

The representativeness and attrition were further explored using a multiple regression analysis. Table 4.3 presents the attrition probit estimates to look for variables that might be different between the panel sample and the dropped-out sample. The results show that none of such income and household characteristics are statistically significant in explaining attrition.

Given the results from both the mean difference comparison and the probit model, it can be concluded that there is unlikely to be significant bias in the estimates. Therefore, the analysis of poverty dynamics in the next section of the thesis can reliably be based on the matched panel households.

Table 4.2: Difference in means for the matched panel and drop-out panel

	Matched panel		Drop-out sample			
	Mean 1	s.d	Mean 2	s.d	Diff in means	T statistics
Household head age	52.90	12.84	54.60	13.71	-1.70	(-0.87)
Female head	0.14	0.35	0.21	0.42	-0.07	(-1.46)
Household size	5.20	1.75	5.10	1.95	0.10	(1.50)
Dependency ratio	0.49	0.52	0.62	0.72	-0.13	(-1.52)
Number of household members						
Child (0-6)	0.30	0.59	0.40	0.50	-0.10	(-1.16)
Child (7-14)	0.60	0.81	0.60	0.71	0.00	(0.00)
Working aged members (15-59)	3.60	1.64	3.50	1.76	0.10	(0.40)
Elderly (60+)	0.40	0.62	0.50	0.71	-0.10	(-1.04)
Education of household head	2.70	2.64	3.10	1.57	-0.40	(-1.08)
Education of working members	4.60	2.66	4.20	5.44	0.40	(2.30)**
Farm size	4.10	3.41	4.40	4.04	-0.30	(-0.57)
Irrigated land	4.40	3.92	4.40	3.17	0.00	(0.00)
Rice yield	2.30	1.26	2.20	2.42	0.10	(0.43)
Agricultural asset value	0.59	0.50	0.55	0.56	0.04	(0.52)
Non-agricultural asset value	0.86	1.29	0.62	0.66	0.24	(1.34)
Income Per capita	2.59	2.83	2.70	3.81	-0.11	(-0.37)
Number of observations	240		55			

Note: *Significant at 10 percent level, **Significant at 5 percent level, ***Significant at 1 percent level

Table 4.3: Probit regression estimates for selective attrition

	Coeff.	Z statistics
Household head age	0.10	0.63
Female head	0.01	0.36
Household size	0.16	-0.47
Dependency ratio	0.77	1.34
Number of household members		
Child (0-6)	0.40	1.13
Child (7-14)	0.08	0.23
Working aged members (15-59)	0.30	1.01
Elderly (60+)	-0.06	-0.12
Education of household head	0.00	0.01
Education of working members	0.05	0.76
Farm size	-0.06	-0.53
Irrigated land	-0.08	-0.67
Rice yield	-0.08	-0.55
Agricultural asset value	0.03	0.24
Non-agricultural asset value	-0.61	-1.35
Income Per capita	0.10	1.22
Constant	-4.30	-3.88
Pseudo R2	0.1261	

Note: Dependent variable (1=included in sample, 0=dropped out of sample)

4.3 Characteristics of sampled households

To maintain comparability, the re-survey in 2009 was conducted to collect the same information from the households as in the 1988 survey. By using questionnaires, the key aspects of the socio-economic characteristics of households as well as the key household assets obtained from the panel survey include the following:

(1) Demographic characteristics (household size/ household composition)

(2) Human capital: Education (years of education) and Labour (occupation)

(3) Land (land size, cultivated, irrigated area) and Tenure arrangement status (proportion land-owned, leasehold, share tenancy)

(4) Physical capital: Agricultural assets (machinery/ livestock/ vegetables and fruit) and Non-agricultural assets (motorcycles and bicycles)

(5) Income source: Farm income (income from rice, non-rice crops, agricultural wages, income from rental and machinery), Non-farm income (non-agricultural wage earnings, self-employment income, remittances)

(See the sample of research questionnaire used in the survey in Appendix 2)

4.3.1 Household demographics

There has been a substantial change in Thailand's demographic characteristics over the last two decades with a declining trend in population growth. While the population grew by 1.9 percent between 1985 and 1990, growth declined to only 0.7 percent between 2005 and 2010[32] (NESDB, 2009a). A similar pattern is also observed in our sample. The average size of households decreased over time from 5.2 in 1988 to 4.4 persons in 2009. The decline was observed in both regions. When considered by household composition, the declining household size was due to a decline in the number of children and number of working-age members. The share of children (0-14 years old) and share of adults or working age members (15-59 years old) declined steadily, while elderly members (60 years old and more) occupied an increasing share of the households. This resulted in a higher dependency ratio[33], particularly in the Northeast

[32] Data source downloaded from http://esa.un.org/unpd/wpp/unpp/p2k0data.asp

[33] The dependency ratio is the ratio of the dependent part, which includes those under the age of 15 and over the age of 60 to the productive part, which includes people between the ages of 15 and 59. It is normally expressed in percentage terms.

region, where there were many out-migrations of teenagers and young working members who moved out of the family to look for more lucrative jobs in manufacturing and the service sector where they could earn greater and more-stable income than they could from farming. The major migrated destinations were big cities or Bangkok and its periphery where industry was mainly concentrated. Data from this survey presented average number of migrants per household. On average, it was found that there was about 2.6 out-migrants per household. Households in the Northeast region had a higher average number of migrants compared to the Central. The change in the demographic characteristics of the sampled households points to a significant structural shift in the rural livelihood system in Thailand. The implication of a higher dependency ratio and smaller household size reflects the aging trend of rural households and suggests that farm households may have suffered from an increasing shortage of labour force, both family and hired labourers, due to labour out-migration. It is also evident that the average age of household heads increased. In 2009, about one third of households also had a female head, rising from 14 percent in 1988. This is because some male heads passed away and some household heads became very old and could not work anymore, so their wives or elder daughters served as the head of the household instead.

In terms of household types, nuclear and extended households constituted the largest group of households. However, there was a greater proportion of single and skipped households over time. This obviously exhibited the growing trend of migration by working age members to work and reside in other areas, especially big cities and Bangkok, leaving their elderly relatives to live alone or take care of their children. These cases were more pronounced in the Northeast than in the Central region.

Table 4.4: Demographics of sample households

Demographics	All areas		Central		Northeast	
	1988	2009	1988	2009	1988	2009
Age of household head (year)	52.9	62.3	55.1	61.7	51.1	62.8
Female-headed household* (% to total households)	14.4	34.9	13.6	36.6	15.1	33.2
Household size (persons)	5.2	4.4	4.9	3.8	5.4	4.8
Number of household members						
0-6	0.4	0.3	0.5	0.2	0.3	0.5
7-14	0.7	0.4	0.6	0.3	0.7	0.5
15-59	3.6	2.6	3.4	2.3	3.8	2.8
60+	0.6	1.1	0.4	1.0	0.6	1.0
Share of household member (%)						
0-6	7.7	6.8	10.2	5.3	5.6	10.4
7-14	12.5	9.1	12.2	7.9	13.0	10.4
15-59	70.0	59.1	69.4	60.5	70.4	58.3
60+	10.6	25.0	8.2	26.3	11.1	20.8
Dependency ratio (%)	44.0	69.2	44.1	65.2	42.1	71.4
Family type ** (%)						
Single	0.8	6.7	0.9	5.6	0.8	7.5
Nuclear	50.7	45.0	54.2	48.6	47.4	42.1
Extended	44.2	38.8	39.3	37.4	48.1	39.8
Skipped	4.6	7.5	5.4	5.6	3.8	9.0
Others	0.0	2.1	0.0	2.8	0.0	1.5
Average number of out-migrants per household	na	2.6	na	2.4	na	2.8

Source: Data from the survey

Note:

* Female heads include widows, divorcees and unmarried women

** Family types are defined as follows:

Single = single parents who raise children on their own or those who are not married.

Nuclear = a family group consisting of a pair of adults and their children.

Extended = a family group consisting of parents, children, grandparents, grandchildren, aunts, uncles, and cousins. It generally includes multiple generations as well as parents and their children's families.

Skipped = a family group consisting of the first and the third generation of the family such as grandparents and grandchildren.

4.3.2 Education and occupation

Two main aspects need to be considered to analyse the human capital asset, one of which is the quantity, i.e. how many people are being educated, while the other is the quality, which relates to how productive people are in terms of employment. The data from the survey shows that smaller size households was also accompanied with higher investment in education. Overall, average level of education of both household heads and working members increased in both regions. Some household heads had been replaced by younger heads with a higher level of education. Classified by educational level, numbers also confirmed this upward trend of households' education endowment. It is evident that about 50 percent of the total working members in 2009 had completed primary school, declining from 85 percent in 1988. On the contrary, the share of working members who had completed both lower and upper secondary school and college level had notably increased, with only 1 percent of working members who had not completed their primary school education. This is consistent with the study by Booth (1997) that showed that household members in rural Thailand had a low enrolment rate at secondary level between 1980 and 1990. This was mainly due to high transportation costs and high tuition fees for children to attend secondary school in the urban area. Wongsith and Knodel (1989) also found that educational attainment at secondary level of rural children in Thailand in 1987 was lower than that of those in urban areas due to demographics, socio-economic background of parents, as well as the distance from home to school.

However, after the government endorsed the new National Educational Reform Act in 1997, the average educational level of household working members increased significantly. This Act provided access to basic education for all Thais, especially those in rural areas, by upgrading rural primary schools to lower secondary schools, in accordance with the extension of basic education[34] from four years at primary level (or Prathom 4) to nine years at lower secondary school level (or Matayom 3), and later, to

[34] Currently, the Thai education system is divided into four levels supervised by the Ministry of Education: pre-primary education (ages 3-5 years old), followed by six years of primary education, three years at lower secondary school, and three years at upper secondary school or two years of vocational education. The Ministry of University Affairs supervises higher education, which offers an associate degree, a four-year bachelor's degree, and a two to five-year postgraduate degree.

twelve years at upper secondary level (or Matayom 6) in 1999. The proportion of working members educated at post-secondary levels, including those at lower and upper secondary levels as well as university level, notably increased from 8 percent to 46 percent of the total working members. However, it is worth noting that, despite the declining proportion of members who completed education at primary level, this still remained the largest group in the households, accounting for more than half of the total working members. Thus, it appears that it was predominantly primary school-educated members who remained in the rural area, while higher educated members tended to migrate to find lucrative non-farm jobs in the urban area or Bangkok. This suggests that there is still room for human capital improvement, especially for the rural labour force.

Apart from the higher education level, there had also been a shift in the occupational structure of rural households[35]. The study by Cherdchuchai et al. (2008) about rural farm households' income dynamics and investment in education revealed that the higher education of the second generation of households in rural areas helped to provide opportunities for them to increasingly become involved in non-farm employment. The data from the survey shows that the number of household heads working in agricultural activities as both farmers and agricultural waged labourers declined, while the number of those working in non-agricultural activities increased. However, heads of the household working on farms as both farmers and agricultural waged labourers still accounted for almost 60 percent of the total households, while those working in non-farm sectors accounted for 15 percent in 2009. A surprisingly high rate of 26 percent of household heads remained unemployed, mainly made up of elderly household heads that had become very old and unable to work on the farm.

There was considerable increase in the proportion of working members in non-farm sectors, including non-farm waged labourers, salaried workers and business owners. This confirmed that more educated members had increasingly moved from agriculture to non-agricultural employment as a result of the rapid development of non-farm sectors. Despite the shift toward non-agricultural activities in the Central plain, the agricultural sector retained the highest share of employment, accounting for more than

[35] It should be noted that the households sampled in the survey include farm households and landless-labourer households, since the main objective of the 1988 original survey was to study the impact of the adoption of a modern variety of rice on the income of farm households.

half of the total working members. This was mainly due to a significant increase in the number of agricultural waged labourers, which reflected the development of hiring activities for farming in the Central region. Almost half of the working members in non-agricultural employment sectors in the Central plain participated in the manufacturing sector, since the studied areas were close to many industrial zones located nearby, for example, in Ayutthaya and Patumthani provinces and also the capital city, Bangkok. The major non-farm activities in the Northeast, in order of importance, were manufacturing (namely factory workers), construction (namely construction workers) and the service sector (namely cleaners, household servants, security guards).

Table 4.5: Educational level of sample households

Education	All areas		Central		Northeast	
	1988	2009	1988	2009	1988	2009
Education of household head (years)	3.6	4.6	3.1	4.4	4.0	4.8
Education of working members (years)	4.6	7.0	4.3	6.3	4.7	7.7
Share of working members by education level (%)						
Not completed primary	6.7	1.2	10.4	2.8	3.0	0.0
Primary school	85.2	51.8	82.5	53.3	89.5	50.3
Lower secondary school	4.6	23.5	3.2	27.2	5.5	20.6
Upper secondary school[1]	2.4	12.8	2.5	7.6	2.2	16.2
College/university[2]	1.2	10.6	2.1	9.4	0.0	11.7
Secondary school	7.0	36.3	5.7	34.8	7.7	36.8
Post lower secondary school	3.6	23.4	4.6	17.0	2.2	27.9

Note:

[1]Includes Certificate of Vocational Education (Por Wor Chor**)**

[2]Includes Technical Diploma in Vocational Education (Por Wor Sor)

Source: Data from the survey

Table 4.6: Occupation of sample households

Occupation	All areas		Central		Northeast	
	1988	2009	1988	2009	1988	2009
Occupation of household head (%)						
Farmer	86.2	54.6	78.9	48.6	91.5	59.4
Agricultural waged labourer	10.0	3.8	19.1	6.5	6.2	1.5
Non-agricultural waged labourer	4.8	6.7	2.0	3.7	2.3	9.0
Salaried worker	0.0	3.8	0.0	1.9	0.0	5.3
Self-employed	0.0	5	0.0	6.8	0.0	3.8
Unemployed	0.0	26.3	0.0	32.7	0.0	21.1
Occupation of working members (%)						
Farmer	79.4	38.0	84.6	43.5	74.2	33.5
Agricultural waged labourer	0.7	7.4	0.9	13.4	0.4	2.5
Non-agricultural waged labourer	17.2	23.3	11.5	16.0	22.8	29.1
Salaried worker	0.0	9.4	0.0	9.3	0.0	9.6
Self-employed	2.8	7.4	3.0	8.6	2.6	6.5
Students	0.0	10.2	0.0	5.4	0.0	14.0
Unemployed	0.0	4.3	0.0	3.8	0.0	4.8
Sector of Non-agricultural employment (%)						
Manufacturing	47.6	39.9	50.7	52.2	46.2	33.7
Construction	21.5	32.3	22.9	29.0	20.0	33.5
Transportation	6.0	3.2	3.8	7.7	7.5	1.7
Services	15.7	16.4	12.4	8.5	18.0	20.8
Others	9.2	8.2	10.2	2.6	8.3	10.3

Source: Data from the survey

4.3.3 Land asset

(1) Size and cultivated area

Land is one of the most important endowments in Thailand. The rapid expansion of land area for cultivation, especially during the first five National Plans (1960-1986), enabled Thailand to develop a strong comparative advantage in agriculture. The amount of cultivated land per farm worker increased and the agricultural sector contained a larger proportion of the labour force compared to many other countries in the region. However, land resources were no longer abundant, and the volume of land per worker had steadily declined since the mid-1980s (Siamwalla, 1991). The expansion of land area had already reached its limitation and was unlikely to provide the same advantages

to the agricultural sector as it had in the past decades (Siamwalla, 1989, Siamwalla, 1991). The data from the panel survey told a similar story.

About half of the farm households in Thailand owned land for agricultural cultivation. In 2008, about 21 million of the 51 million hectares or 320 million rais[36] of the total area of the whole country was farm land, and more than 60 percent of this farm land accounted for Thailand's rice growing area. The average farm size was 3.6 hectares per household, which was a decrease from 4.2 hectares per household in 1988 (OAE, 2009). Smaller farm sizes also featured in the surveyed households. The farm size of the sampled households declined from 4.1 hectares per household in 1988 to 3.2 in 2009. This decline was most apparent in unfavourable areas, including rain-fed and drought-prone areas, particularly in the Northeast region. Due to the unfavourable production environment and scarcity of water for cultivation, households in these areas were only able to grow a single rice crop per year during the wet season only for their own consumption and leave their lands fallow for the rest of the year. Relatively low rice yields caused some households in the Northeast region to suffer substantial losses from rice and crop farming; thus, they had to sell some of their land to pay back the debts they had incurred. According to the interviews with village heads and local people, some households sold their lands to businessmen and investors from the city and Bangkok in order to pay their debts. In addition, the size of the some farms reduced because households allocated some land into small parcels as an inheritance for their children, who eventually migrated after marriage with their own family to other villages or other provinces. Therefore, the number of small-landholding households increased in the Northeast region.

The average farm size in the Central region also slightly declined owing to a decline of land size in the rain-fed areas. However, it increased in households in favourable irrigated areas and flood-prone areas in the Central region. Not only were these areas favourable for growing rice, but the farmers were able to adopt large-scale machinery for rice cultivation, such as power tillers or four-wheeled tractors for land preparation and combined harvesters for paddy harvesting and threshing. Labour-saving

[36] 1 rai equals 0.16 hectares

technology was firstly introduced in the Central region during the early 1960s before spreading to the Northeast. In the Central plain, the adoption of power tillers in all production environments was completed by 1998, while the adoption in the Northeast has increasingly increased. The use of buffalos is rarely seen in Thailand today (Isvilanonda and Wattanutchariya, 1994, Isvilanonda et al., 2000) Farmers have found that the adoption of machinery saves them time and reduces their labour costs, enabling them to produce higher crop intensity every year. The rapid increase in the agricultural mechanisation of rural households in the Central plain was the result of intensive competition in the rental service market and high labour wages incurred by a shortage of labour in the agricultural sector (Siamwalla, 1987, Isvilanonda et al., 2000). As a result of being able to increase the intensity of the rice crop every year, farmers, especially those in the irrigated areas of the Central region, could earn higher income and were able to buy additional land. Thus, the farm size in the Central plain is larger than in the Northeast on average, and farm sizes have become comparatively larger over time. In 2009, the farm size in the Central region was about 3.6 times that in the Northeast region, while in 1988, the ratio between these two regions was only 2.5. This confirms the increased disparity of landholding at the regional level over time.

The total cultivated area[37] showed the opposite direction from the farm size. In 2009, the cultivated rice area increased from 1988, which was attributed to the expansion of the irrigation system in the Central region, which had sufficient water for cultivation all year round. There was a higher proportion of irrigated land area to the total farmland area in the Central plain. The irrigated area in the Northeast region also increased[38] but remained relatively low compared to the Central region.

In terms of land quality, the productivity of rice production or rice yield per area was considered, and it was evident that the rice yield performance of rural farmers had improved over the past two decades. Higher rice production per cultivated area was observed in both regions, mainly due to the increased intensity in rice crops. Following

[37] Cultivated land areas include all rice-growing areas, both in the wet and the dry seasons.

[38] It is worth noting that the reason for the increase in the irrigated proportion in the Northeast region was not completely due to the adoption of water pump irrigation, but because farm households in the rain fed production areas sold some of their land in order to buy new land near the irrigated areas. This happened during the economic boom in 1996-1997 when the price of land rose very quickly.

the green revolution in 1970, both access to irrigation and the adoption of high-yielding modern rice varieties (MV) (also known as new short-duration varieties or early maturing rice varieties)[39] enabled farmers in the irrigated areas of the Central plain to increasingly adopt double or triple rice cropping patterns, and thus, helped to increase the rice yield per year. Farmers in flood-prone villages also tried to change their rice-growing periods. Instead of growing single long-duration traditional rice during the flooding period in the wet season, they kept their land fallow and left the land uncultivated until the water completely drained away. After the wet season, they were able to grow short-duration MV rice two consecutive times during the dry season. Thus, the adoption of MV was higher and more likely to affect the rice yield performance in the Central plain than in the Northeast.

Although rice yields in the Northeast increased, they remained relatively lower than in the Central region because the adoption of MV was not yet fully implemented in the Northeast, even in irrigated areas. Farmers commonly applied a double rice cropping system in the irrigated areas by growing local glutinous rice[40] in the wet season for their own household consumption, and adopting MV rice in the dry season, mainly for commercial purposes. Moreover, the uncertainty of the weather in the rain-fed area and the scarcity of water in the drought-prone area limited the crop-growing pattern in the region, especially during the dry season. Single-cropped rice-growing with traditional high quality rice varieties remained the major cropping pattern in the Northeast, being mainly found in rain-fed and drought-prone areas where farmers grew rice in the wet season and kept the land uncultivated or grew some upland crops, such as cassava and sugarcane, during the dry season. Therefore, rice-fallow cropping patterns accounted for about 60 percent of the total cultivated area in the Northeast, while they only accounted for 10 percent in the Central region.

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[39] Common rice in irrigated and flood prone areas in the Central plain are non-glutinous varieties including Pitsanuloke2, Kao Hom Suphan, Suphan 60, Pathum and Chainat 80 which are classified as non-photosensitive lowland rice. These improved rice varieties are suitable for the flood prone environment since they do not need long period of light and tolerance to insects. Their yield potential is relatively high, however, they are not as high quality as Kao Hom Mali or jasmine rice varieties.

[40] Glutinous rice is a traditional subsistence crop of the Northeastern farmers. Gor Kor 6 (RD6) is the most common rice in the Northeast. It is an improved local variety from Kao Dok Mali 105 which is a high quality jasmine rice. Farmers generally grow this type for household consumption during the wet season.

(2) Land tenure arrangement

Not only had the land size and land utilisation of rural households changed over the past two decades, but also the land tenure patterns. Owner cultivation remained the dominant pattern of land tenure in both regions. However, the number of households farming their own land declined, while the number under leasehold tenancies rose. Landless tenants had become more evident, which suggested the development of the land rental market in rural areas, especially in the Central region. In addition, it was partly because some farm households had sold all their land and become landless households who worked on others' farms. There was also an uptrend of households that owned land, but none of the members were engaged in farming anymore, as well as households that rented out their land. This uptrend reflected the scarcity of family workers who could work on farms. Since they were increasingly migrating to look for lucrative non-farm jobs in the city and the rest of household members has become too old to work on farm, they needed to rent out their land to others. Some households even had to leave their land uncultivated, as can be seen by the increased number of land-owned households with no household members to work on the farm.

Table 4.7: Land asset of sample households

Land	All areas		Central plain		Northeast	
	1988	2009	1988	2009	1988	2009
Farm size (ha)	4.1	3.2	6.1	5.4	2.4	1.5
Rice cultivated area (ha)	4.4	5.0	6.9	8.9	2.4	1.8
Farmland area with irrigation (% of area)[1]	38.3	50.9	48.8	62.8	30.0	42.8
Adoption of MV (% of area) [1]	25.1	48.1	37.7	68.9	15.0	34.0
Rice cropping intensity (times per year)[2]	1.4	1.7	1.5	1.9	1.3	1.5
Rice yield (ton/ha)[2]	2.3	2.7	2.6	2.8	2.1	2.5
Tenure type (Number of households)						
Sample size	240	240	107	107	133	133
Land owned	217	192	96	85	121	107
Land owned but not work on farm	0	18	0	3	0	5
Landless tenant[3]	23	27	11	10	12	9
Landless workers[4]	0	11	0	6	0	5
Rented-out	0	10	0	3	0	7
Tenure type (% of area) [1]	100.0	100.0	100.0	100.0	100.0	100.0
Land-owned	82.0	78.0	73.0	68.0	90.0	85.0
Leasehold tenancy (fixed-rent)	12.0	19.0	24.0	31.0	3.0	10.0
Sharecropping tenancy	6.0	3.0	3.0	1.0	7.0	5.0
Cropping pattern (% of area) [1]						
Rice-fallow	74.3	34.4	76.0	10.8	72.6	58.0
Rice-rice	16.2	49.3	14.2	58.1	18.6	40.5
Rice-other crops	5.3	15.3	9.4	29.0	1.2	1.5
Non-rice-fallow	4.2	1.6	0.3	3.2	7.6	0.0

Note:
[1] Ratio to total cultivated area and average only farm households
[2] Average only farm households
[3] Landless households that members work on others' farms
[4] Landless households that members work only in non-farm sectors
Source: Data from the survey

Some differences could be seen when considering the tenure patterns of each region. The incidence of owner cultivation was relatively higher in the Northeast than in the Central region. This is because the areas in the Northeast were only relatively recently opened for cultivation after the Central plain areas, which are known as the old settled areas where the land leasing market or landlordism originally existed (Isvilanonda and Wattanutchariya, 1994). In terms of tenancy landholding, a leasehold

tenancy pattern that offered a fixed rental rate[41] was commonly found in the Central region, while a sharecropping pattern was more prevalent in the Northeast, especially in less favourable areas, i.e. rain-fed and drought-prone areas facing with more irregular rainfall and unstable rice yields. This is also consistent with Otsuka et al (1992), who emphasised that sharing the risk with a sharecropping system is more preferable in unfavourable areas.

(3) Distribution of landholding

The distribution of landholding data from the household survey indicated that there was an increase in the proportion of smaller landholder households in rural Thailand. Only 8 percent of households owned less than 0.8 hectares in 1988, and this proportion had risen to 25 percent in 2009. On the contrary, large landholder households that owned more than 8.0 hectares of land and accounted for 40 percent of the total land made up 12 percent of the total households, a decline from 14 percent in 1988. In addition, when comparing the land size between large landholders (own more than 4.0 hectares) and small landholders (own less than 0.8 hectares), it appeared that large landholders owned land about 20 times larger on average than small landholders. The ratio also increased over time, which confirmed a higher disparity in the distribution of landholding.

The change in land distribution was found to be diverse among regions. Although the proportion of large-landholding households declined in the Central region, they still remained the largest group, accounting for 30 percent of all households and occupying more than 60 percent of the land. While the proportion of small landholders increased to 17 percent in 2009, they still only owned 0.4 percent of the land. In the Northeast region, the proportion of small-landholding households also increased and became the majority group. Households owning less than 0.8 hectares of land accounted for the highest share of about 32 percent of households in 2009, up from 14 percent in 1988. Moreover, the proportion of households owning less than 1.6 hectares accounted for nearly 70 percent of total households. When comparing the land size between small

[41] Rents were fixed either in amounts of paddy or in cash. The rental format was decided and agreed between landlords and tenants. The rental rate was generally based on the crop intensity of areas each year.

and large landowners, a greater disparity was found between the households in the Central region than between those in the Northeast.

The mobility in landownership between the survey period of 1988 and 2009 is illustrated in Table 4.9. Clearly, there was a structural transfer in the landholding of rural households in Thailand. About 65 percent of households who were small landowners remained unchanged in 2009. Only another 35 percent of households had the ability to move up to hold a little larger land size. At the other end of the mobility matrix, almost 40 percent of large landowners remained in the same position, while another 60 percent of them became smaller landowners. Overall, there was more downward mobility than upward mobility of landholding with large landowners becoming small landowners, especially in the Northeast rather than the Central plain.

Table 4.8: Distribution of land holding

(Hectare)	Proportion of households		Proportion of land		Average land size	
	1988	2009	1988	2009	1988	2009
All areas						
Less than 0.8	7.5	25.4	1.8	2.3	0.5	0.3
0.8-1.5	12.9	20.0	3.5	6.7	1.1	1.1
1.6-3.1	34.2	21.3	18.9	13.9	2.3	2.1
3.2-4.7	14.2	10.0	13.4	11.3	3.9	3.6
4.8-6.3	9.6	7.9	12.7	12.9	5.4	5.3
6.4-7.9	7.1	3.3	12.3	7.1	7.1	6.9
8.0 and more	14.6	12.1	38.2	45.9	10.7	12.3
Central region						
Less than 0.8	0.0	16.8	0.0	0.4	0.0	0.1
0.8-1.5	8.4	9.3	1.5	1.9	1.1	1.1
1.6-3.1	22.4	14.0	9.0	6.0	2.4	2.3
3.2-4.7	14.0	10.3	7.4	7.2	4.0	3.8
4.8-6.3	8.4	15.9	7.8	15.3	5.7	5.2
6.4-7.9	15.0	7.5	17.3	9.5	7.1	6.9
8.0 and more	31.8	26.2	55.5	59.7	10.7	12.4

Table 4.8: Distribution of land holding (continued)

(Hectare)	Proportion of households		Proportion of land		Average land size	
	1988	2009	1988	2009	1988	2009
Northeast region						
Less than 0.8	13.5	32.3	2.9	7.9	0.5	0.4
0.8-1.5	16.5	28.6	7.6	20.7	1.1	1.1
1.6-3.1	43.6	27.1	38.8	37.2	2.2	2.0
3.2-4.7	14.3	9.8	22.6	23.4	3.9	3.5
4.8-6.3	10.5	1.5	22.5	5.6	5.2	5.5
6.4-7.9	0.8	0.0	2.3	0.0	7.4	0.0
8.0 and more	0.8	0.8	0.3	0.5	10.6	9.92

Source: Data from the survey

Table 4.9: Mobility of land ownership among sample households, 1988 and 2009

2009 1988	Less than 0.8	0.8-1.5	1.6-3.1	3.2-4.7	4.8-6.3	6.4-7.9	8.0 and more	Total
(% of households)								
All areas								
Less than 0.8	65.0	25.0	10.0	0.0	0.0	0.0	0.0	100.0
0.8-1.5	33.3	46.7	13.3	3.3	3.3	0.0	0.0	100.0
1.6-3.1	25.6	25.6	25.6	9.0	6.4	1.3	6.4	100.0
3.2-4.7	18.4	18.4	23.7	21.1	7.9	2.6	7.9	100.0
4.8-6.3	17.4	13.0	43.5	8.7	0.0	0.0	17.4	100.0
6.4-7.9	23.5	0.0	17.6	11.8	17.6	11.8	17.6	100.0
8.0 and more	5.9	0.0	11.8	11.8	17.6	11.8	41.2	100.0
Central region								
Less than 0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
0.8-1.5	44.4	33.3	11.1	0.0	11.1	0.0	0.0	100.0
1.6-3.1	21.7	17.4	4.3	13.0	17.4	4.3	21.7	100.0
3.2-4.7	11.8	11.8	23.5	17.6	11.8	5.9	17.6	100.0
4.8-6.3	11.1	11.1	44.4	0.0	0.0	0.0	33.3	100.0
6.4-7.9	25.0	0.0	12.5	12.5	18.8	12.5	18.8	100.0
8.0 and more	6.1	0.0	12.1	9.1	18.2	12.1	42.4	100.0
Northeast region								
Less than 0.8	65.0	25.0	10.0	0.0	0.0	0.0	0.0	100.0
0.8-1.5	28.6	52.4	14.3	4.8	0.0	0.0	0.0	100.0
1.6-3.1	27.3	29.1	34.5	7.3	1.8	0.0	0.0	100.0
3.2-4.7	23.8	23.8	23.8	23.8	4.8	0.0	0.0	100.0
4.8-6.3	21.4	14.3	42.9	14.3	0.0	0.0	7.1	100.0
6.4-7.9	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0
8.0 and more	0.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0

Source: Data from the survey

4.3.4 Physical assets

Households had accumulated a higher net value of agricultural and non-agricultural assets. However, the growth rate of the accumulated non-agricultural assets was faster than that of agricultural assets. Compared by region, households in the Northeast owned more valuable non-agricultural assets, while households in the Central region held greater agricultural assets. This is consistent with what was mentioned earlier, i.e. that more farmers in the Central plain extensively adopted large-scale machinery for rice production than those in the Northeast areas. The different agricultural assets held between these two regions suggested a different pattern of area environment and rice production. With greater access to irrigation, farm households in the Central region normally owned centrifugal pumps to drain water from the canals to irrigate their farms, while households in the Northeast owned fewer such pumps since they had insufficient access to irrigation. Machines to spray pesticide and chemical fertilizer were widely used in the Central region, where rice was mainly grown for commercial purposes, than in the Northeast, where traditional rice varieties were grown for the famers' own consumption, so they tended to use less pesticide and chemical fertilizer. Households in the Central plain also adopted four-wheeled tillers or large tractors instead of power tillers for land preparation, while farmers in the Northeast usually owned a power tiller.

The net value of livestock had also increased tremendously, because most households in the rain-fed area in the Central region owned a number of cattle and pig farms for commercial purposes. These households only grew a single rice crop per year in the wet season, and worked on livestock ranch activities during the dry season.

Table 4.10: Physical assets of sample households

Physical assets (Net value in real 2009 price, unit '1,000 baht)	All areas		Central		Northeast	
	1988	2009	1988	2009	1988	2009
Agricultural assets[1]	24.5	33.9	36.0	41.8	15.2	27.6
Livestock [2]	0.3	14.3	0.4	24.9	0.2	0.6
Home-grown vegetables and fruit[3]	0.1	0.1	0.0	0.2	0.2	0.1
Non-agricultural assets[4]	17.5	28.2	14.4	26.2	19.9	29.7

Note:

[1] Agricultural assets include power tiller, centrifugal pump, pesticide spray machine, four-wheeled tiller and thresher

[2] Livestock includes cattle, poultry and pigs

[3] Home-grown vegetables and fruit households can sell

[4] Non-agricultural assets include pick-ups, cars, motorcycles and bicycles

Source: Data from the survey

4.3.5 Financial assets

Financial capital in this study represents the ability of households to access loans. Access to loans is considered to be one of the most important means of financing since it can facilitate the acquisition of income and other capital items, as well as providing insurance, especially against income volatility and shocks. According to the survey, households took loans for many purposes including consumption, farming, self-owned business, education and debt repayment purposes. The key sources of financing for rural households were mainly the Bank for Agriculture and Agricultural Cooperatives, microfinance institutions, including village revolving funds[42], cooperative groups, and informal lenders. In addition, many forms of people's organisations could also be found in the villages, such as funeral association groups, savings groups, farmers' groups and housewives' groups. These groups have the same basic objective of providing financial assistance for local villagers. It appeared that only a few households borrowed money from commercial banks, and this is consistent with many recent

[42] Village Funds were introduced in Thailand in 2001 following the initiative of a microfinance programme for the poor in many developing countries. The Thai government developed the rural credit market by injecting 1 million Baht, or about 28,000 US dollar at the current exchange rate, into each of about 77,000 villages in Thailand. Thus, the programme cost about 77 billion Baht or about 1.5 percent of GDP. The village funds became the second form of rural credit with a market share of almost 20 percent of the total rural credit volume after the Bank for Agriculture and Agricultural Cooperatives.

studies that emphasise the additional role of microfinance for providing credit to rural households in Thailand (Boonperm et al., 2009, Menkhoff and Rungruxsirivorn, 2011).

The survey data revealed that the average outstanding loan made by households in the Central plain was about three times higher than that of those in the Northeast region. In terms of the purpose of financing, it was found that half the households borrowed for farming purposes, especially for purchasing major agricultural inputs such as fertilisers, pesticides and other farm equipment. About 30 percent of households used the loans for consumption and family purposes; for example, for purchasing cars or motorcycles, for repairing the house, and for purchasing household appliances. Almost 70 percent of the households in the Central plain borrowed for farming, while about 40 percent of the households in the Northeast generally borrowed for consumption purposes.

Table 4.11: Financial assets of sample households in 2009

	All areas	Central	Northeast
Number of households	124	63	61
Average Loans (Thousand Baht)	125.2	190.6	60.9
Purposes (% of Total loans)			
Consumption/ Family purpose	33.1	22.2	44.3
Farming	49.2	69.8	27.9
Business	8.1	3.2	13.1
Education	5.6	3.2	8.2
Debt repayment	4.0	1.6	6.6

Source: Data from the survey

4.4 Changing sources of household income by region

The composition of household income needed to be reviewed to examine the changes in poverty over time. The components of household income in the rural economy are generally categorised into two main sources, namely, farm income and non-farm income (Barrett et al., 2001, Nargis and Hossain, 2006, OAE, 2009). The definitions of farm and non-farm income in this study are given below.

Farm income includes income from (1) crop production (rice and non-rice) (2) non-crop production (livestock, poultry, fisheries and forestry) (3) agricultural wage income and (4) rental revenue from land and machinery and earning interests.

Non-farm income includes income from (1) non-agricultural wages (basically including daily wages from a wide range of labour activities; for example, construction, transport, industrial labour and services) (2) regular salary (3) entrepreneurial or self-employed business profits (3) remittances and (4) other sources (including, for example, monthly welfare allowances for elderly and disabled persons).

The data from the survey revealed that the average annual household income in real terms, inflated by the 2009 rural consumer price index, more than doubled over the period between the two surveys. The average household income increased from 126,888 baht in 1988 to 258,699 baht in 2009 or from 4,930 US$ in 1988 to 7,535 US$ in 2009. The annual average growth rate was about 3.5 percent per year[43]. In real terms, the equivalent annual household income per adult rose from 1,029 US$ in 1988 to 2,329 US$ in 2009, with an annual growth rate of 4.6 percent. The real growth over this period was mainly attributable to the increase in non-farm income, which grew by 10.7 percent of the annual rate. However, farm income was almost nil, growing by only 0.3 percent per year.

The structure of rural household income had shifted as a result of the continued high growth rate of non-farm income during the past two decades of the survey period. Farming was no longer the main source of income for rural households. The contribution of non-farm income to total household income had increased significantly

[43] The annual growth rate was computed by using the continuous compounding growth method.

and accounted for the highest share of total household income. The proportion had increased from 12 percent in 1988 to 55 percent in 2009. Households in the Northeast experienced a substantial increase in non-farm income share of about 77 percent in 2009, up from 12 percent of the total income in 1988. This is in line with much previous literature, confirming that there has been an increasing recognition that non-farm income has become more important to rural households in many developing countries (Reardon et al., 2000, Davis and Bezemer, 2004, World Bank, 2008, IFAD, 2011). Cross-sectional data from a recent nation-wide survey of about 5.8 million farm households in all regions of Thailand showed that non-farm income had risen from 46 percent in 2000 to 61 percent in 2008 (OAE, 2009).

The household income composition presented in Table 4.12 also suggests that among the non-farm income components, the income of regular salary markedly increased, particularly in the rainfed areas of the Northeast region where a greater share of regular salary was observed, from 3 percent in 1988 to 33 percent in 2009. Remittances also contributed more to the total income, rising from only 4 percent in 1988 to 10 percent in 2009. The share of remittances was highest in the drought-prone area in the Northeast, which suggests an increasing trend of migration of people from this unfavourable area. This trend is also in line with the migration data at the national level. According to the macro level data on migration, about 2 million of the 31 million labour force in Thailand were employed as internal migrants in 2004. In 2002, the number of internal migrants increased to 6 million of the 48 million labour force of the whole country[44] (NSO, 2003). Krongkaew, Tinakorn and Suphachalasai (1992) studied rural poverty in Thailand and found that farmers in the Northeast region generally migrated to work in the cities during the drought and slack season.

However, in the Central region, farm income still constituted the main income source of 60 percent of total household income, mainly due to the increased income share of agricultural wage and non-rice crops[45]and livestock. It is worth noting that, one

[44] There was a change in the labour force definition in 2000 when the labour force was defined as members of the population aged 13 years or more. From 2000 onwards, it was defined as members of the population aged 15 years or more.

[45] This included income from water chestnuts in irrigated areas, cassava and sugar cane in rain-fed areas and shrimps in flood-prone areas

of the priorities of the Seventh National Plan (1992-1996) was agricultural diversification with the aim of reducing the number of farmers dependent on single crop farming. Thus, the share of rice income declined significantly from about 70 percent of the total household income in 1988 to 27 percent in 2009. This suggests that the increase in productivity in rice production had not been able to be translated into a higher growth of farm income, even in favourable irrigated areas in the Central region that were observed to have a significant increase in rice yields. One possible reason for this was the slower growth of paddy prices compared to soaring wage rates and factor prices especially prices of fertilizer, pesticides, and gasoline (Isvilanonda et al., 2000).

Clearly, the changes in the income structure of rural households over the past two decades implied dissimilarities in income-generating opportunities, as well as diversified strategies between these two regions of Thailand. The reliance of rural households in the Northeast had shifted away from rice farming to salaried job and non-agricultural waged labour, especially in the manufacturing and construction sectors, business and remittances. There had been limited opportunities for farm households in the Northeast to increase their farm income by rice intensification, especially in an unfavourable environment, due to the uncertain rainfall, lack of irrigation facilities, and lack of access to production factors (Ahmad and Isvilanonda, 2003, OAE, 2009). Therefore, working members tended to diversify their economic activities by participating in non-farm employment or migrating out of the villages to urban areas or Bangkok. More highly educated children tended to work in lucrative non-farm sectors, while less educated children generally worked in casual low-skilled and low-waged jobs such as construction. On the contrary, households in the Central region still mainly relied on agricultural income. Rice cultivation was not the main contributor of farm income. However, there was some agricultural diversification toward more non-rice crops and livestock farming. Agricultural diversification to non-rice crops was most apparent in both the irrigated and rain-fed areas, while livestock was mainly found in the rain-fed and flood-prone areas.

Table 4.12: Source of household income

Income	All areas		Central		Northeast	
	1988	2009	1988	2009	1988	2009
Composition (%)	100.0	100.0	100.0	100.0	100.0	100.0
1. Farm income	*86.6*	*45.1*	*94.4*	*60.5*	*71.6*	*22.7*
1.1 Rice	65.8	21.3	71.3	27.0	55.3	13.2
1.2 Non-rice and livestock	14.4	14.8	16.9	22.5	9.6	3.5
1.3 Agricultural wage	5.5	7.6	4.8	9.6	6.8	4.7
1.4 Rental and interest earned	0.9	1.4	1.4	1.4	0.0	1.3
2. Non-farm income	*13.4*	*54.9*	*5.6*	*39.5*	*28.4*	*77.3*
2.1 Non-agricultural wage	7.1	9.6	0.6	3.8	19.9	20.0
2.2 Regular salary	2.2	24.0	1.8	17.8	3.0	33.1
2.3 Self-employment	1.4	10.0	1.6	10.8	1.1	8.8
2.4 Remittances	2.5	8.1	1.6	5.4	4.0	10.2
2.5 Others[1]	0.0	3.2	0.0	1.8	0.0	5.3
Current household income (Baht)	48,907	258,699	73,553	344,374	27,244	189,773
Real household income (Baht)[2]	126,888	258,699	187,602	344,374	78,043	189,773
Per capita income (Baht)	27,083	69,112	40,162	101,667	16,562	42,922
Average household income (US$)[3]	4,930	7,535	7,288	10,031	3,032	5,528
Per capita income (US$)	1,029	2,329	1,565	3,415	598	1,455

Note:
[1] Others include monthly allowance granted for elderly, disabled people in rural areas (500 Baht per person), started in 2007.
[2] Average household income in real terms inflated by the rural consumer price index in 2009
[3] Exchange rate in 1988 1US$ = 25.7 Thai Baht in 2009 1US$ = 34.3 Thai Baht
Source: Data from the survey

4.5 Change in income poverty

Income has long been acknowledged as being a key aspect of welfare in poverty analysis and still remains so today. According to the income approach, the concept of poverty is defined based on a lack of income to meet the minimal requirements of a living standard comprising a set of basic human needs. The measurement of poverty in the income poverty approach requires the formation of an absolute poverty line to serve as a critical cut-off level an individual needs to afford to purchase a basic bundle of goods and services. The approach argues that those individuals or households whose income or expenditure falls below this poverty line are determined as being poor.

This study adopts two poverty lines: (1) Thailand's official poverty line[46] for rural areas released by the Office of the National Economic and Social Development Board (NESDB), the government's central planning agency under the Prime Minister's Office of Thailand. (2) The international poverty line, which is 1.25 dollars per capita per day in terms of purchasing power parity[47].

Table 4.13: Thailand's official poverty lines

Poverty line	All areas		Central		Northeast	
	1988	2009	1988	2009	1988	2009
Baht per capita per year	6,684	17,856	7,740	18,756	6,000	17,424
US Dollar per capita per year	259.7	520.1	300.7	546.3	233.1	507.5

Source: National Economic and Social Development Board

There are a number of studies regarding poverty measures, but the most classic and well-known one is the work by Foster, Greer and Thorbecke or the so-called FGT class (Foster et al., 1984). The FGT method was employed to estimate poverty in this chapter, where the poverty measure is generally given by the following equation:

$$P_{\alpha} = \frac{1}{n}\sum_{y_i < z}^{n}\left(\frac{z - y_i}{z}\right)^{\alpha}$$

Where y_i is the per capita income of a household i, n is the total household population, z is the poverty line, and α is the degree of aversion to inequality among the poor. The measures are defined for $\alpha \geq 0$, and α is a measure of the sensitivity of the index to poverty. If we use α=0, we have the headcount index. If we use α =1, we have the poverty gap index. If we use α =2, we have the squared poverty gap index.

[46] For the new poverty line calculation method, see NESDB 2008. Report on Poverty and Income Distribution of Thailand in 2007 (in Thai). Bangkok: Office of the National Economic and Social Development Board.

[47] The country-level implied PPP conversion rate was taken from Penn World On-line Tables (PWT 7.0) http://pwt.econ.upenn.edu/php_site/pwt70/pwt70_form.php.

There are three key poverty measures as follows:

(1) The poverty headcount ratio (also called poverty incidence or poverty rate), is the most common poverty indicator. This is the percentage of the population who is poor; that is, the proportion of the population whose per capita income, y, is less than the poverty line, z. The ratio is defined as follows:

$$P_0 = \frac{1}{n}\sum_{y_i=1}^{n} I\,(y_i < z)$$

Or simply defined as:

$$P_0 = \frac{n_p}{n}$$

Where n_p is the number of household population who is poor

(2) The poverty gap ratio (also considered as the depth of poverty). The poverty gap is a good indicator that captures the magnitude of poverty, representing the distance of the poor from the poverty line as a percentage of the total number of households. The ratio is defined as follows:

$$P_1 = \frac{1}{n}\sum_{y_i=1}^{n}\left(\frac{G_i}{z}\right)$$

$$G_i = (z - y_i) \times I(y_i < z)$$

(3) The severity of poverty (or the squared poverty gap). This considers the square of the distance separating the poor from the poverty line. The severity index gives more weight to the very poor than to the less poor. In other words, it takes the inequality among the poor into account, in which a higher weight is placed on households that stay further from the poverty line. The index is defined as follows:

$$P_2 = \frac{1}{n}\sum_{y_i=1}^{n}\left(\frac{G_i}{z}\right)^2$$

Using two different poverty lines, both national and 1.25 dollars-a-day, the results in Table 4.14 show that there was a significant decline in poverty incidence, poverty depth and the severity of poverty in both of the surveyed regions. Over the past two decades, the headcount ratio computed by using the national poverty line declined markedly from 52 percent in 1988 to 17 percent in 2009. The poverty incidence is higher in the Northeast region than in the Central plain, but a greater decline is observed in the Northeast. This suggests that the differences in poverty incidence between the two regions have declined. If consider by production environment areas within each region, it is apparent that rain-fed areas experienced greater decline in poverty incidence rate than the favourable irrigated areas. This suggests that not only there were decrease in gaps in poverty incidence between the two regions, but the differences in poverty incidence between favourable and unfavourable areas have also declined.

This successful poverty reduction was accompanied by a reduction in the intensity of poverty. The poverty gap index and the poverty severity also declined between 1988 and 2009. The findings from the survey are consistent with the national poverty indices released by the government (NESDB, 2011). Similar to the headcount ratio, the estimates of the poverty gap and the poverty severity were somewhat higher in the Northeast than in the Central region. However, a more rapid rate of decline in poverty indicators was observed in the Northeast. The much larger magnitudes of change in these two measures of poverty in the Northeast region suggest that the decline in poverty rates was also more evenly distributed among the poor than those in the Central plain.

Table 4.14: Poverty indicators

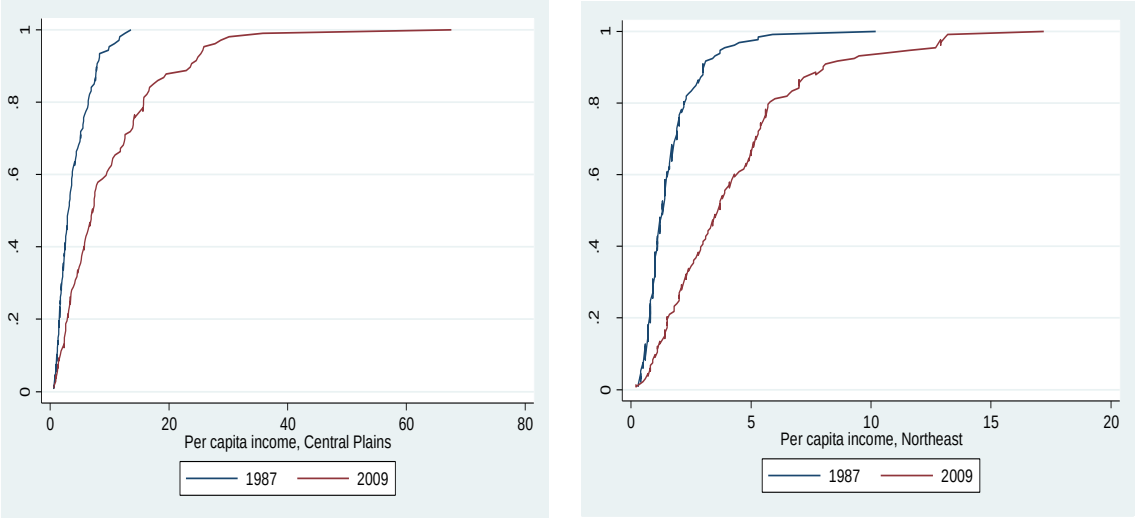
		All areas		Central plain		Northeast	
		1988	2009	1988	2009	1988	2009
Poverty headcount	National poverty line	51.7	16.7	30.8	11.2	68.4	21.1
	1.25$ a day*	40.8	9.2	16.8	4.7	60.2	12.8
	(Official rate)**	(49.7)	(10.4)	(36.5)	(3.0)	(60.6)	(15.2)
Poverty gap	National poverty line	20.3	6.4	9.7	4.1	28.9	8.3
	1.25$ a day	10.8	1.2	5.6	0.4	16.5	1.8
	(Official rate)	(13.6)	(1.8)	(9.2)	(0.4)	(17.3)	(2.5)
Poverty severity	National poverty line	10.4	3.2	4.2	1.9	15.3	4.3
	1.25$ a day	3.5	0.6	1.1	0.1	5.6	0.9
	(Official rate)	(5.2)	(0.5)	(3.4)	(0.1)	(6.7)	(0.6)

Note:
*1.25$ a day poverty line using implied PPP conversion rate downloaded from Penn World On-line Tables (PWT 7.0) http://pwt.econ.upenn.edu/php_site/pwt70/pwt70_form.php
**The official National poverty incidence reported by NESDB as updated in October 2011.
Source: Author's calculation

When comparing poverty measures over time, it is important to test the robustness of the changes in poverty indices (Ravillion, 1994). Indeed, the results of poverty studies may be sensitive to the selection of the poverty line. Using stochastic dominance techniques or a poverty dominance analysis can help to address the robustness of poverty comparisons[48]. The cumulative distribution functions (CDFs) or poverty incidence curves of real per capita income in the Central and the Northeast regions of Thailand are presented in Figure 4.1. It can be seen that the distribution in 1988 lies above the distribution in 2009, so that poverty is always higher for the former than the latter distribution, wherever the poverty line is drawn, which suggests that the distribution of first-order poverty in 2009 dominates the distribution in 1988. Thus, it can be concluded that the decline in poverty rates in both regions was not sensitive to the choice of poverty line.

[48] First-order statistical dominance involves comparing the cumulative distribution functions of the income level for each of the surveyed years. One distribution dominates another if the cumulative income distribution function for that year lies above that of the year at all levels of income. If first-order dominance is found to hold between two different years, it implies that all FGT poverty measures, including the headcount, poverty gap, and squared poverty gap, in the first year are higher than in the other year for all poverty lines.

Figure 4.1: Cumulative distribution functions of real per capita income in the Central (left) and Northeast region (right) of Thailand between 1988 and 2009



4.6 Poverty dynamics pattern

The changes in poverty under the cross-sectional nature of the statistics presented in Section 4.5 only give an overall picture of the poverty trend, but does not reveal whether or not the same set of households remained in poverty over the entire period; neither does it provide a clear picture of how many households escape from, or enter into, poverty. An investigation of the poverty dynamics can provide more insight.

The poverty transition matrix used by several empirical studies of poverty dynamics over a long-run period was applied at this stage of the analysis to examine the extent to which households move into and out of poverty between the two wave panels (Sen, 2003, Bhide and Mehta, 2004, Kabeer, 2004, Nargis and Hossain, 2006, Hossain, 2009, Lohano, 2011). Households were classified into four poverty dynamic categories on the basis of their poverty status using NESDB's national poverty line at the initial period of the study in 1988 and their poverty position at the end of the study in 2009.

The poverty dynamic categories include:

(1) Chronic poor: households who remain poor in both periods of 1988 and 2009
(2) Moving out of poverty: households who were poor in 1988 but are not poor in 2009.
(3) Moving into poverty: households who were not poor in 1988 but are poor in 2009.
(4) Never poor: households who are not poor in both periods of 1988 and 2009.

It can be clearly seen from Table 4.15 that about 10 percent of households remained poor in both periods, whereas 50 percent experienced poverty in one or two years, or were sometimes poor. 42 percent of households were able to move out of poverty, while 8 percent moved into it. The larger proportion of households that moved out of poverty than those move into it were in line with the decline in poverty incidence. In addition, the proportion of households moving into or out of poverty was also higher than those remaining in poverty, similar to most incidence of poverty mobility in other developing countries (Baulch and Hoddinott, 2000, Dercon and Shapiro, 2007).

When considering each region, important regional location differences were also found in the pattern of poverty dynamics. The survey data suggests that the proportion of households remaining in chronic poverty in the Northeast region was higher than in the Central plain. However, an even larger proportion of households in the Northeast could escape from poverty than in the Central plain. Meanwhile, there was almost the same proportion of those moving into poverty in both regions.

Table 4.15: Poverty dynamics in 1988 and 2009, using national poverty line

(%)	All area	Central	Northeast
Chronic poor (Poor 1988 and Poor 2009)	9.6	5.6	12.8
Moving out of poverty (Poor 1988 and Non-poor 2009)	42.1	25.2	55.6
Moving into poverty (Non-poor 1988 and Poor 2009)	7.9	7.5	8.3
Never poor (Non-poor 1988 and Non-poor 2009)	40.4	61.7	23.3

Source: Author's calculation

4.7 Descriptive analysis of household characteristics of poverty dynamics groups

The key socio-economic characteristics of the sampled households and key asset endowments in each dynamic category are further investigated in this section. A comparison of groups of poverty dynamics indicates the different characteristics and factors that explain why some poor households can move out of poverty, while others fail to do so and remain chronically poor, as well as the factors that cause some non-poor households to enter into poverty.

4.7.1 Household demographics

Demographic factors are one of the key features that provide a general idea of the household size and household composition of the dependents (children and elderly) and the working members within the household. It can be clearly seen in Table 4.16 that, in both regions, the average age of the household heads of the moving into poverty households was relatively higher than the other groups, and also higher than the average age of the total heads of households. The average age of household heads of the chronic poor was also high. The moving into poverty and the chronic poor groups were also faced with a substantial expansion of the dependency ratio, with the largest increase mainly observed in the Northeast region. The dependency ratio of the chronic poor reached the highest level compared to other poverty groups and was more than double the average ratio of all households. The increase in the dependency ratio was mainly due to a higher proportion of elderly members, while the proportion of working aged members had considerably declined due to out-migration from their hometown to the cities and the capital, Bangkok. Survey data suggested that chronic poor households had highest number of out-migrants. From Table 4.16, it appeared that the chronic poor and the moving into poverty had 3.1 and 2.8 members per household who migrated outside the village, higher than other poverty groups.

In all, this suggests that the increased demographic dependency ratio, the ageing population and the out-migration had led to the shortage of labour force in farm households which as a result have negative implications for rural income growth and increase the probability of people moving into poverty and remaining in chronic poverty. Several studies in developing countries provide similar evidence of the relationship between demographic factors and poverty (Mckay and Lawson, 2003).

In terms of household size, it seems that the correlation between household size and household income had remained complex. Intuition generally suggests that a decline in household size tends to reduce the burden on households' assets and expenditure. Thus, household size is likely to be positively related to poverty or larger households tend to be poorer, specifically in developing countries (Lipton and Ravillion, 1994, Lanjouw and Ravallion, 1995) However, in some cases where households are reliant on

agriculture for their livelihood, the decreased size may affect the household due to a shortage of labour during cultivation periods (ibid) and this is likely to have a positive influence on poverty (Jalan and Ravillion, 1998b). The findings from this survey revealed that chronic poor households have the largest household size in 2009, while the never poor have the smallest size. In terms of the degree of change in household size over time, the data showed that all groups experienced a smaller household size; however, the magnitude of decline was relatively larger in the moving out of poverty and the never poor groups. In addition, the decline in household size of the moving out of poverty and never poor households was mainly due to the decline of child members, while for the chronic and moving into poverty groups, the decline was because of the significant reduction in the number of working members, which was evident from the sharp rise in the dependency ratio. Thus, it is worth noting that, when examining the relationship between household size and poverty, it is not only necessary to consider the size of the household, but also take account of the demographic structure to ascertain the reasons for the change in household size. While all poverty dynamic groups contained a higher proportion of female heads of households, the moving into poverty households had the highest proportion of female heads in both survey periods.

Figure 4.2: Demographic structure by poverty dynamics group, 1988 and 2009

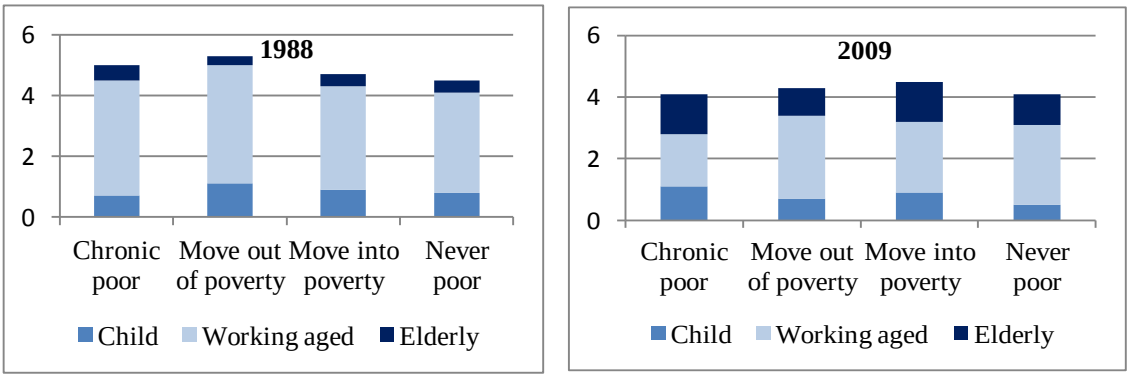


Table 4.16: Demographics by poverty dynamics group

	Chronic poor		Move out of poverty		Move into poverty		Never poor		All	
	1988	2009	1988	2009	1988	2009	1988	2009	1988	2009
Total areas										
Age of household head (year)	57.6	66.5	52.0	62.3	52.4	69.8	52.7	59.8	52.9	62.3
Female-headed household (% to total households)	17.4	26.1	15.8	36.6	26.3	52.6	9.3	32.0	14.4	34.9
Household size (persons)	5.4	5.0	5.6	4.4	4.9	4.4	4.8	4.0	5.2	4.4
Share of household members (%)										
0-6	4.6	11.9	7.3	6.1	1.5	8.2	7.4	4.6	7.7	6.8
7-14	7.5	7.2	13.1	8.4	15.8	8.5	9.0	5.8	12.5	9.1
15-59	68.5	36.6	69.3	59.0	70.2	46.5	68.1	61.8	70.0	59.1
60+	11.0	40.9	5.3	26.5	7.3	36.8	10.9	27.6	10.6	25.0
Dependency ratio (%)	35.8	120.6	50.7	59.0	50.7	101.8	51.1	55.8	42.1	71.4
Central region										
Age of household head (year)	60.8	75.0	57.4	62.0	49.4	71.1	54.4	59.2	55.1	61.7
Female-headed household (% to total households)	0.0	16.7	22.2	48.1	25.0	62.5	9.1	30.3	13.6	36.6
Household size (persons)	5.0	3.3	5.3	3.8	5.0	4.0	4.8	3.8	4.9	3.8
Share of household members (%)										
0-6	5.0	2.1	9.1	6.6	1.6	2.1	6.9	4.8	10.2	5.3
7-14	14.2	2.1	8.3	6.3	11.9	9.8	7.3	5.8	12.2	7.9
15-59	54.2	43.8	65.2	60.8	80.8	32.4	68.2	60.8	69.4	60.5
60+	12.5	52.1	9.9	26.3	4.2	55.7	11.4	28.3	8.2	26.3
Dependency ratio (%)	64.5	51.7	58.7	54.8	28.7	104.2	48.1	53.1	44.1	65.2
Northeast region										
Age of household head (year)	56.9	63.5	50.1	62.5	54.5	68.8	49.1	61.0	51.1	62.8
Female-headed household (% to total households)	21.1	29.4	13.5	32.4	27.3	45.5	9.7	35.5	15.1	33.2
Household size (persons)	5.5	5.6	5.7	4.7	4.9	4.7	4.9	4.8	5.4	4.8
Share of household members (%)										
0-6	4.6	15.4	6.7	5.9	1.5	12.7	8.4	4.0	5.6	10.4
7-14	6.1	9.0	14.8	9.2	18.7	7.5	12.6	6.0	13.0	10.4
15-59	71.6	34.1	70.8	58.3	62.5	55.7	67.8	64.0	70.4	58.3
60+	10.7	37.0	3.7	26.6	9.6	23.0	9.9	26.1	11.1	20.8
Dependency ratio (%)	29.8	144.9	47.8	60.6	66.7	100.2	56.9	60.1	42.1	71.4
Average number of out-migrants per household	na	3.1	na	2.5	na	2.8	na	2.4	na	2.6

Source: Data from the survey

4.7.2 Education and occupation

Human capital endowment is considered to be the important endowment for escaping poverty. Various empirical studies of chronic poverty in many developing countries emphasise the importance of education in gaining higher return employment and thus moving households out of poverty (Mckay and Lawson, 2003, Baulch, 2011). It is likely that higher education enables household members to access better employment. The empirical findings from many developing countries indicate that initial education is positively associated with moving out of poverty in Bangladesh, Nepal and Vietnam (Baulch, 2011).

The survey data suggests that both household heads and working members of farm households in rural Thailand had been able to access more average years of education in the past two decades. This confirmed the success of the extension of compulsory education in Thailand from primary to lower secondary level. Nonetheless, there was a difference in the level of education across the poverty groups. While the average level of education of rural households had increased for all poverty groups, the pace of improvement was found to be the fastest in the never poor group. The average number of years of schooling of working members of the moving out of poverty and chronic poor households was found to be 7.2 and 5.4 years respectively in 2009, up from 4.6 and 4.3 years respectively in 1988. This indicates that the working-age members of the moving out of poverty category had a higher initial level of education, and also experienced a more significant improvement than members of chronically poor households.

When classifying working members by educational level, it is clearly observed that the increase in the average years of schooling of working members was more pronounced for the never poor and moving out of poverty groups, while the average number of school years only modestly increased for the chronic poor and moving into poverty households. In the never poor and moving out of poverty categories, the proportion of working members who were uneducated or had completed less than primary school level declined to zero, while the proportion of working members who had completed secondary and university education considerably increased. However,

none of the working members in the chronic poor and moving into poverty groups had completed their education at university level. This shows that there were disparities in the level of educational attainment of rural households among different poverty dynamic groups.

When considering initial endowments in human capital, the never poor households had the highest average educational level of 4.7 years, while those moving into poverty had the lowest initial educational level of 4.3 years. Nevertheless, there was no significant difference in the initial level of education between the four groups. The average educational attainment in the initial period of study in 1988 was 4.6 years following Thailand's four-year compulsory education at the primary level (Prathom 4) during that period. However, the gap in human capital endowment widened over time. The average number of years of education of working members rose from 1 to 1.4 times higher for the never poor compared with the chronic poor households. This reflected a certain degree of inequality in the overall distribution of human capital, which triggered the variation in households' poverty dynamic status.

Human capital is not only important in terms of educational attainment, but also different forms of occupational status as a source of livelihood. Households diversify their asset endowments in different ways to construct their livelihood; thus, it is vital to analyse the employment activities in which households engage to earn their living. McKay and Lawson (2003) reviewed this situation in many countries and concluded that employment status had a different effect on poverty and varied country by country. In Bangladesh, having household members who were involved more in non-agricultural employment, specifically salaried work, was found to be positively associated with moving out of poverty (Kabeer, 2004, Nargis and Hossain, 2006, Davis, 2011, Baulch, 2011). However, in Peru, working outside the household in the non-agricultural sectors tended to increase the likelihood of remaining in chronic poverty (Campa and Webb, 1999).

The survey data from rural households in Thailand in Table 4.18 shows the proportion of household working members classified by different occupational activities. There was an increase in the proportion of members in non-agricultural activities over time. All poverty groups exhibited a similar pattern by shifting their livelihood from being reliant on agricultural to the non-agricultural sector. However, the occupational shift occurred at different paces of change in each poverty category. For the chronic poor group, about 35 percent of working members served as farmers and another 30 percent as non-agricultural waged labourers, while there was a lower percentage of those moving out of poverty. There were also a higher percentage of farmers in the moving into poverty group compared to the never poor. The moving into poverty group also contained the highest percentage of unemployed persons. A rise in the proportion of salaried workers[49] and self-employed persons was largely found in both the moving out of poverty and never poor households. On the contrary, none of the working members who worked as salaried workers fell into poverty. This illustrates that the increase in the number of members engaging in non-agricultural employment, particularly those who earned their income from regular salaried work and self-owned businesses, tended to help households to become more resilient from stable and secured income sources and thus able to escape from poverty.

Analysing the data by each region could enable a better understanding of the changing pattern of employment. There are some differences in livelihood strategies among the two regions. It was found in the Central region that, although all groups experienced occupational reallocation from the agricultural sector to the non-agricultural sector, farming still remained the dominant occupation of households. There was no significant difference in the proportion of farmers among the four poverty categories, since all groups experienced a declined in the number of farmers. However, significant differences were observed in the increase in proportion of farm waged labourers. There was an increased reliance of those moving out of poverty households on farm waged labourers, which suggests that working as farm waged labourers is likely to be positively

[49] Salaried work includes employment in formal service, both in the government (such as administrative work, teaching, police, army state owned enterprises, public service work) and the private sector (private companies, factories, bank). Workers with this employment status earned regular salaries, paid on a monthly or weekly basis.

associated with the escape from poverty in the Central region. This partly explains the successful development of farm labourers' hiring activities and the significance of the role played by the agricultural sector in reducing poverty in the Central region. For the chronic poor households, it is likely that non-agricultural waged labourers have become largest proportion instead of farmers.

All the poverty dynamic groups in the Northeast region changed their dependent livelihood strategy from the agricultural to the non-agricultural sector. The number of workers engaged in the non-farm sector substantially increased over time. These increases were much more pronounced in the salaried work and self-owned business of both the never poor and moving out of poverty households. This illustrates that the occupational shift to non-agricultural employment, particularly salary- earning work and self employment, is an important factor associated with moving households out of poverty in the Northeast region. This finding is consistent with many panel studies of developing countries, including Asia and Africa, which stress the importance of non-farm employment as the key to moving people out of poverty (Narayan et al., 2009, Baulch, 2011).

Figure 4.3: Educational level by poverty dynamics group, 1988 and 2009

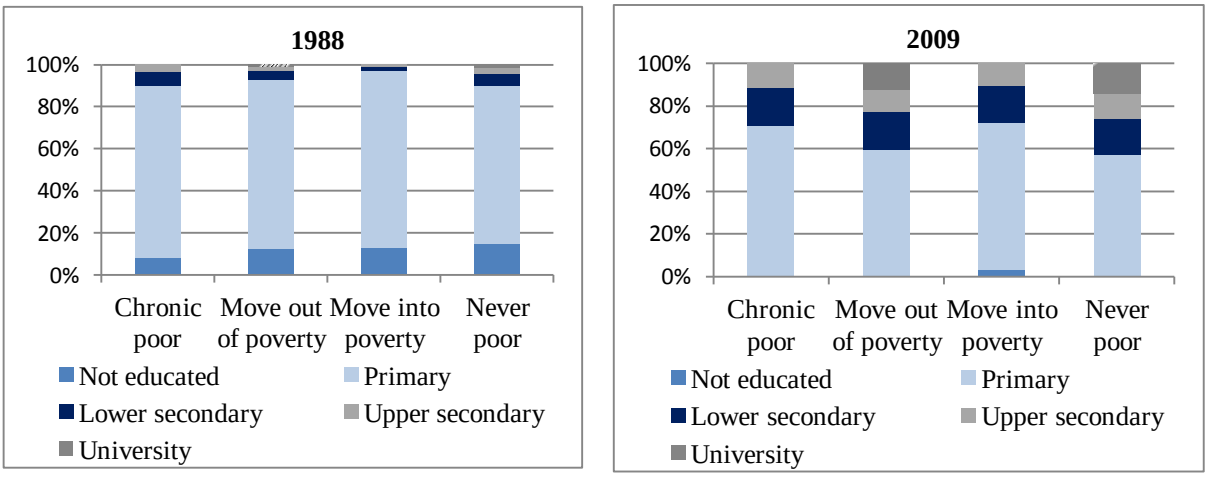


Table 4.17: Educational level by poverty dynamics group

	Chronic poor		Move out of poverty		Move into poverty		Never poor		All	
	1988	2009	1988	2009	1988	2009	1988	2009	1988	2009
Total areas										
Education of household head (years)	4.0	4.2	3.5	4.5	3.3	3.9	3.6	4.9	3.6	4.6
Education of working members (years)	4.3	5.4	4.6	7.2	4.5	6.2	4.7	7.6	4.6	7.0
Share of working members by education level (%)										
Not completed primary	8.1	0.0	12.3	0.0	12.9	3.0	14.6	0.0	12.0	1.0
Primary school	81.6	71.0	81.6	59.4	84.5	69.2	75.3	57.3	80.4	63.9
Lower secondary school	7.0	17.4	4.2	18.0	1.3	17.3	6.0	16.8	4.6	17.4
Upper secondary school [1]	3.3	11.6	1.9	10.3	1.3	10.5	2.8	12.2	2.3	11.2
College/university[2]	0.0	0.0	1.0	12.3	0.0	0.0	1.3	13.7	0.7	6.5
Central region										
Education of household head (years)	4.5	4.0	2.1	3.8	3.0	2.9	3.3	4.8	3.1	4.4
Education of working members (years)	4.3	3.6	4.0	6.8	3.9	3.9	4.6	6.5	4.3	6.3
Share of working members by education level (%)										
Not completed primary	25.0	0.0	27.3	3.0	12.9	0.0	13.9	5.2	10.4	2.8
Primary school	62.5	60.0	66.4	59.1	87.1	84.6	75.5	51.3	82.5	53.3
Lower secondary school	6.3	30.0	18.0	22.7	0.0	15.4	5.5	21.4	3.2	27.2
Upper secondary school [1]	6.3	10.0	1.8	13.0	0.0	0.0	3.0	11.0	2.5	7.6
College/university[2]	0.0	0.0	2.7	12.1	0.0	0.0	2.1	11.0	2.1	9.4
Northeast region										
Education of household head (years)	3.9	4.2	4.0	4.7	3.6	4.6	4.3	5.2	4.0	4.8
Education of working members (years)	4.6	6.4	4.8	7.4	4.4	7.8	4.9	9.3	4.7	7.7
Share of working members by education level (%)										
Not completed primary	3.4	0.0	2.6	0.0	10.0	0.0	1.0	0.0	3.0	0.0
Primary school	89.7	63.6	89.7	49.3	85.0	60.0	85.1	36.0	89.5	50.3
Lower secondary school	5.7	24.2	5.8	20.9	2.5	20.0	9.9	21.3	5.5	20.6
Upper secondary school [1]	1.1	12.1	1.9	16.3	2.5	20.0	4.0	22.5	2.2	16.2
College/university[2]	0.0	0.0	0.0	13.5	0.0	0.0	0.0	20.2	0.0	11.7

Note: [1]Includes Certificate of Vocational Education (Por Wor Chor**)**

[2]Includes Technical Diploma in Vocational Education (Por Wor Sor)

Source: Data from the survey

Table 4.18: Occupation by poverty dynamics group

	Chronic poor		Move out of poverty		Move into poverty		Never poor		All	
	1988	2009	1988	2009	1988	2009	1988	2009	1988	2009
Total areas										
Occupation of working aged household members (%)										
Farmer	83.4	35.9	76.8	31.1	93.3	54.5	80.0	40.6	79.4	38.0
Agricultural waged labourer	1.8	7.7	2.0	7.1	0.4	4.1	0.3	7.6	0.7	7.4
Non-agricultural waged labourer	14.8	28.2	21.2	31.4	6.3	9.1	19.8	18.5	17.2	23.3
Salaried worker	0.0	5.1	0.0	10.2	0.0	0.4	0.0	10.4	0.0	9.4
Self-employed	0.0	2.6	0.0	6.0	0.0	6.8	3.2	9.2	2.8	7.4
Students	0.0	15.4	0.0	10.2	0.0	15.9	0.0	9.6	0.0	10.2
Unemployed	0.0	5.1	0.0	3.9	0.0	9.1	0.0	4.0	0.0	4.3
Central region										
Occupation of working members (%)										
Farmer	86.0	22.2	78.3	29.2	96.4	56.2	82.0	50.0	84.6	43.5
Agricultural waged labourer	2.0	11.1	1.7	21.5	1.6	15.4	2.0	10.3	0.9	13.4
Non-agricultural waged labourer	12.0	33.3	20.0	26.2	2.0	7.7	16.0	12.2	11.5	16.0
Salaried worker	0.0	11.1	0.0	9.2	0.0	0.0	0.0	9.0	0.0	9.3
Self-employed	0.0	0.0	0.0	4.6	0.0	13.1	0.0	9.6	3.0	8.6
Students	0.0	11.1	0.0	4.6	0.0	0.0	0.0	6.4	0.0	5.4
Unemployed	0.0	11.1	0.0	4.6	0.0	7.7	0.0	2.6	0.0	3.8
Northeast region										
Occupation of working members (%)										
Farmer	80.3	40.0	70.0	31.7	85.5	58.1	77.5	30.7	74.2	33.5
Agricultural waged labourer	0.2	6.7	4.1	2.8	0.3	0.0	0.9	3.2	0.4	2.5
Non-agricultural waged labourer	18.5	26.7	25.9	33.0	14.2	9.7	21.6	27.3	22.8	29.1
Salaried worker	0.0	3.3	0.0	10.6	0.0	0.0	0.0	10.9	0.0	9.6
Self-employed	0.0	3.3	0.0	6.4	0.0	0.0	0.0	8.6	2.6	6.5
Students	0.0	16.7	0.0	11.9	0.0	22.6	0.0	14.1	0.0	14.0
Unemployed	0.0	3.3	0.0	3.7	0.0	9.7	0.0	5.5	0.0	4.8

Source: Data from the survey

4.7.3 Land assets

The accumulation of asset endowments is a key determinant of poverty dynamics and economic mobility (Baulch and Hoddinott, 2000). Land is an extremely important asset for farm households. McKay and Lawson (2003) reviewed studies of chronic poverty in low income countries and indicated that many of them provide evidence that landholding is an important factor associated with poverty, while a number of them argue that the returns from land assets are more important than accumulating land.

As described in Section 4.3.3, the availability of land endowment in Thailand is limited and the expansion of land area for cultivation seems unable to provide advantages to the agriculture sector any more. In terms of land quantity, the average farm size had decreased across all poverty dynamic groups. The pace of decline was the greatest in chronic poor households and was only minimal in the never poor group. A high degree of inequality in landownership was found when comparing the initial farm size. The initial farm size in the first survey was 1.8 times higher for the never poor compared with chronic poor households; however. this gap rose to almost 3.5 times in the second survey in 2009.

Despite the decline in the average farm size, land utilisation is likely to be a key factor for moving people out of poverty. The pattern of change between groups was much more pronounced in terms of land utilisation as measured by the average area of cultivated land. The cultivated area declined for the chronic poor and those moving into poverty, while it significantly increased for the moving out of poverty and never poor groups. There was a significant increase in cultivated areas, especially in the irrigated and flood-prone areas in the Central region, where farmers adopted high-yielding modern rice varieties and fully utilised all their land by cultivating it two to three times a year. However, the cultivated area in all poverty dynamics groups declined over time in the Northeast region. This was not only the result of a decline in farm size, but was also related to the fact that farm households could only grow secondary rice on the part of their land that was located near irrigated areas during the dry season, while most households still applied a single-crop rice-growing pattern. Irrigated areas depicted a

similar pattern as cultivated land. The chronic poor and the moving into poverty groups had declined in irrigated areas, while the moving out of poverty and never poor groups occupied a larger area. This suggests that an increase in cultivated and irrigated areas may have a positive impact on moving out of poverty and remaining never poor.

The quality of land was also reflected in the amount of farm productivity or rice production per area. The rice yields of the moving out of poverty and never poor increased following a rise in crop intensity, while the chronic poor and moving into poverty households experienced lower yields. The rice yield of never poor households was about 3 times higher than that of the chronic poor. The matched difference was most apparent in the Central plain, while the rice yield between these two groups was found to make no significant difference in the Northeast region.

Figure 4.4: Land endowment by poverty dynamics group, 1988 and 2009

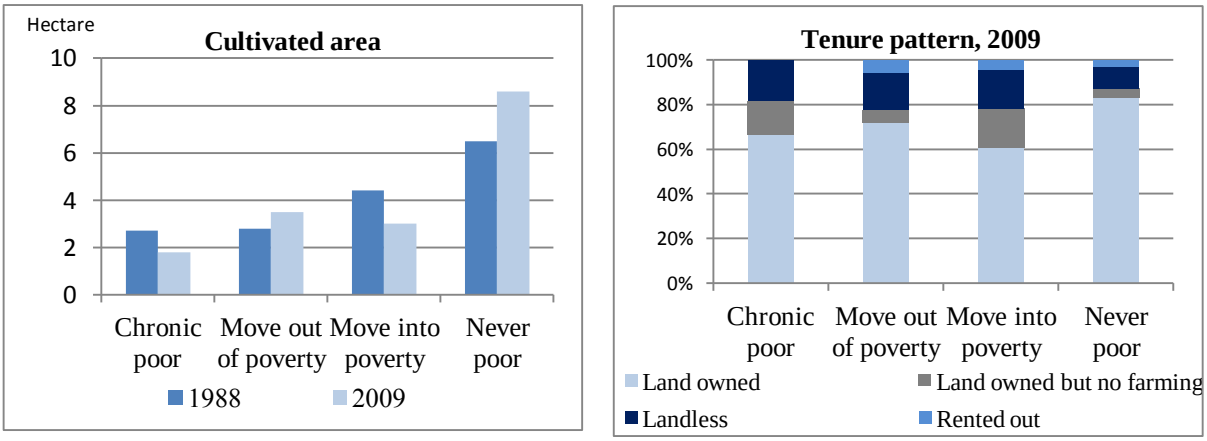


Table 4.19: Land endowment by poverty dynamics group

	Chronic poor		Move out of poverty		Move into poverty		Never poor		All	
	1988	2009	1988	2009	1988	2009	1988	2009	1988	2009
Total areas										
Farm size (ha)	2.9	1.4	3.1	2.2	4.8	3.2	5.2	4.8	4.1	3.2
Rice cultivated area (ha)	2.7	1.8	2.8	3.5	4.4	3.0	6.5	8.3	4.4	5.0
Irrigation (% of area)[1]	29.3	29.0	36.4	61.5	25.3	21.4	63.5	75.5	38.3	50.9
Rice cropping intensity (times per year)	1.3	1.3	1.3	1.7	1.5	1.4	1.6	2.0	1.4	1.7
Rice yield (ton/ha)	1.9	1.8	2.0	2.6	2.0	1.4	2.8	3.2	2.3	2.7
Central region										
Farm size (ha)	4.7	2.0	6.1	4.8	5.9	4.9	6.5	6.3	6.1	5.4
Rice cultivated area (ha)	4.4	1.1	4.9	9.7	5.1	3.2	8.2	11.5	6.9	8.9
Irrigation (% of area)[1]	25.0	0.0	30.4	44.8	37.5	14.3	68.8	76.7	48.8	62.8
Rice cropping intensity (times per year)	1.0	1.0	1.1	1.5	1.4	1.3	1.6	2.0	1.5	1.9
Rice yield (ton/ha)	1.1	1.0	1.5	1.8	2.2	0.6	3.1	3.2	2.6	2.8
Northeast region										
Farm size (ha)	2.6	1.1	2.0	1.3	4.0	2.3	3.0	2.2	2.4	1.5
Rice cultivated area (ha)	2.3	2.0	2.0	1.6	3.9	2.9	3.1	2.5	2.4	1.8
Irrigation (% of area)[1]	31.6	47.6	35.1	53.3	27.3	44.4	41.9	51.5	30.0	42.8
Rice cropping intensity (times per year)	1.4	1.4	1.4	1.5	1.3	1.5	1.4	1.4	1.3	1.5
Rice yield (ton/ha)	2.0	2.1	2.2	2.8	1.9	1.9	2.1	2.5	2.1	2.5

Source: Data from the survey

The comparison of tenure patterns among the poverty dynamic groups revealed that the proportion of farm households that farmed their owned land had declined in all four poverty groups. Land had been transferred through the tenancy market following the development of the land rental market, so that the proportion of landless rented-in tenants who still actively worked on farms, as well as the proportion of rented-out landlords, had become more apparent in the moving out of poverty group. There had also been an increase in the proportion of households that owned land, but left it fallow since none of household members were engaged in farming, and the rate of increase was much higher for the chronic and moving into poverty groups than the other two groups.

The tenancy market was found to be more active in the Central region than in the Northeast region. In addition, the increase in land-owned households with nobody working on the farm was more pronounced for the chronic poor and those moving into

poverty in the Central region compared to the Northeast. This suggests that, even though households owned land, leaving it uncultivated, mainly because of the shortage of farm labourers, tended to move households into poverty, as well as maintaining them in chronic poverty. This reflects that the capacity of households to cultivate on their lands were critical to their income generation.

Table 4.20: Land tenure pattern by poverty dynamics group

	Chronic poor		Move out of poverty		Move into poverty		Never poor		All	
	1988	2009	1988	2009	1988	2009	1988	2009	1988	2009
Total areas										
Tenure type (% of total households)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Land owned	91.3	66.7	92.1	76.2	73.7	60.9	89.7	83.0	90.4	72.5
Land owned but not work on farm	0.0	14.8	0.0	5.9	0.0	17.4	0.0	4.0	0.0	7.5
Landless	8.7	18.5	7.9	16.8	26.3	17.4	10.3	10.0	9.6	15.4
- Farm tenant (Rented-in)	8.7	11.1	7.9	11.2	26.3	13.0	10.3	7.0	9.6	10.8
- Non-farm workers	0.0	7.4	0.0	5.6	0.0	4.3	0.0	3.0	0.0	4.6
Rented-out	0.0	0.0	0.0	5.6	0.0	4.3	0.0	3.0	0.0	4.6
Central region										
Tenure type (% of total households)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Land owned	100.0	55.6	85.2	56.7	75.0	63.6	89.4	80.0	89.7	79.4
Land owned but not work on farm	0.0	33.3	0.0	10.0	0.0	27.3	0.0	5.7	0.0	2.8
Landless	0.0	11.1	14.8	26.7	25.0	9.1	10.6	12.9	10.3	14.9
- Farm tenant (Rented-in)	0.0	0.0	14.8	16.7	25.0	9.1	10.6	10.0	0.0	9.3
- Non-farm workers	0.0	11.1	0.0	10.0	0.0	0.0	0.0	2.9	0.0	5.6
Rented-out	0.0	0.0	0.0	6.7	0.0	0.0	0.0	1.4	0.0	2.8
Northeast region										
Tenure type (% of total households)										
Land owned	89.5	72.2	94.6	77.9	72.7	58.3	90.3	90.0	91.0	80.5
Land owned but not work on farm	0.0	5.6	0.0	3.9	0.0	8.3	0.0	0.0	0.0	3.8
Landless	10.5	22.2	5.4	13.0	27.3	25.0	9.7	3.3	9.0	10.6
- Farm tenant (Rented-in)	10.5	16.7	5.4	9.1	27.3	16.7	9.7	0.0	9.0	6.8
- Non-farm workers	0.0	5.6	0.0	3.9	0.0	8.3	0.0	3.3	0.0	3.8
Rented-out	0.0	0.0	0.0	5.2	0.0	8.3	0.0	6.7	0.0	5.3

Source: Data from the survey

4.7.4 Physical assets

Physical assets are another important factor as a means for households to generate income. The average value of agricultural assets increased across the poverty dynamic groups during the period. However, the performance of those moving out of poverty appeared to be outstanding compared to other groups. The average value of agricultural assets and livestock considerably increased by about 3 and 6 times respectively over the period, compared with only 1.5 and 3 times for the chronic poor households. This evidence suggests that the accumulation of agricultural assets played a key role in the process of escaping from poverty, while chronic poor households failed to take advantage of the increase in assets. The accumulation of non-agricultural assets was also observed in all four groups; however, the increase was the highest in the case of the chronic poor. This suggests that all rural households, including the chronic poor, had accumulated non-agricultural assets, as measured by the value of owned vehicles, despite the fact that the ownership of these assets may not be able to generate additional income or bring households out of poverty. A high degree of inequality was found in the ownership of agricultural assets. The initial level of all kinds of assets owned by chronic poor households was the lowest, while it was the highest for the never poor. The average value of agricultural assets held by the never poor was about 8 times higher than those owned by the chronic poor in 1988. The matched difference, although declining, remained high at almost 5 times in 2009, and the inequality in agricultural asset ownership was higher in the Central plain than in the Northeast.

Figure 4.5: Physical asset by poverty dynamics group, 1988 and 2009

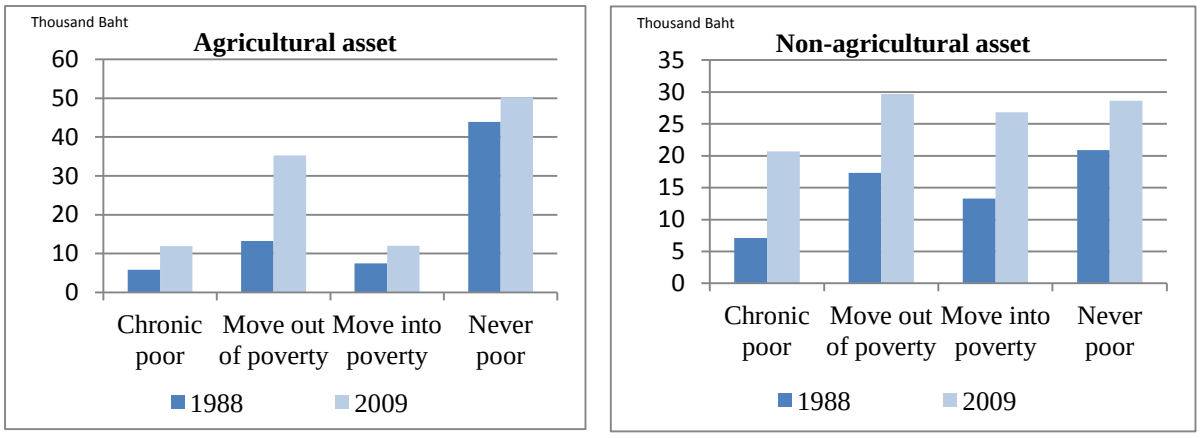


Table 4.21: Physical asset by poverty dynamics group

(Thousand Baht)	Chronic poor		Move out of poverty		Move into poverty		Never poor		All	
	1988	2009	1988	2009	1988	2009	1988	2009	1988	2009
Total areas										
Agricultural assets[1]	5.8	11.9	13.2	35.3	7.5	12.0	43.9	50.2	24.5	33.9
Non-agricultural assets[2]	7.1	20.7	17.3	29.7	13.3	26.8	20.9	28.6	17.5	28.2
Home-grown vegetables and fruit[3]	1.4	0.2	1.1	1.2	1.7	0.1	1.2	2.0	0.1	0.1
Livestock [4]	0.1	3.4	1.3	7.5	7.2	11.0	4.0	18.9	0.3	14.3
Central region										
Agricultural assets[1]	1.9	0.4	17.5	50.4	3.0	15.4	50.7	59.6	36.0	41.8
Non-agricultural assets[2]	3.5	20.0	12.3	26.5	0.0	15.6	18.1	28.0	14.4	26.2
Home-grown vegetables and fruit[3]	0.0	0.0	0.0	0.8	0.5	0.0	0.1	2.5	0.0	0.2
Livestock [4]	0.0	4.0	1.5	19.5	9.3	23.2	4.3	21.2	0.4	24.9
Northeast region										
Agricultural assets[1]	6.6	20.1	11.7	26.6	10.8	9.6	29.5	40.5	15.2	27.6
Non-agricultural assets[2]	7.8	20.9	19.1	30.9	22.9	34.9	26.9	29.8	19.9	29.7
Home-grown vegetables and fruit[3]	1.7	0.3	1.5	1.4	2.6	0.2	3.6	1.0	0.2	0.1
Livestock [4]	0.2	3.2	1.2	3.1	5.6	2.1	3.5	14.1	0.2	0.6

Note:

[1] Agricultural assets include power tiller, centrifugal pump, pesticide spray machine, four-wheeled tiller and thresher

[2] Non-agricultural assets include pick-ups, cars, motorcycles and bicycles

[3] Home grown vegetables and fruit that households can sell

[4] Livestock includes cattle, poultry and pigs

Source: Data from the survey

4.7.5 Financial assets

In terms of outstanding loans, the never poor households had the highest average loan outstandings compared to other poverty groups especially the moving into poverty with greater access to institutional sources of credit. The moving out of poverty households also had higher access to credit than the chronic poor, which suggests that access to credit could become an important factor in the process of moving out of poverty and becoming never poor.

In terms of the purpose of the loan, the chronic poor households mainly used loans for their own daily consumption, while the moving out of poverty households relatively borrowed more for productive purposes, such as investing in farming and business.

Figure 4.6: Financial assets by poverty dynamics group, 1988 and 2009

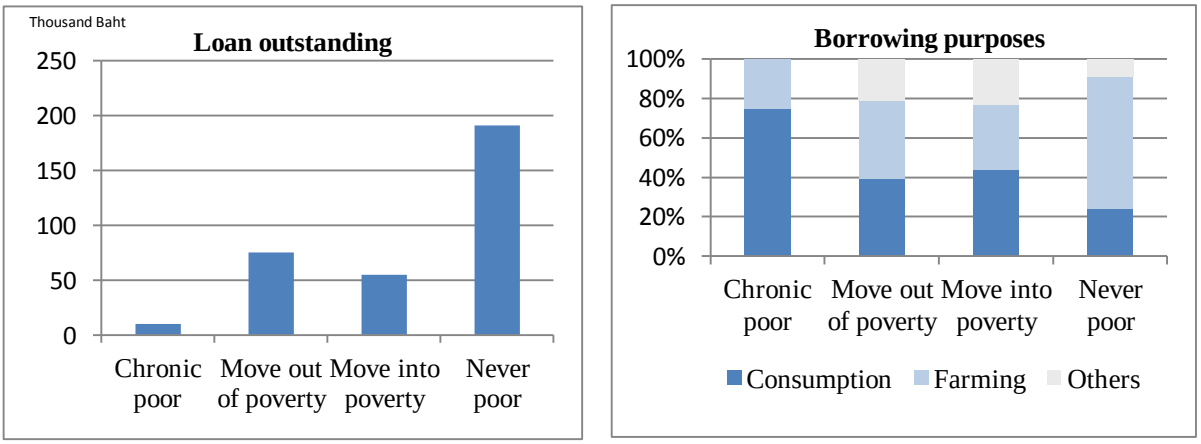


Table 4.22: Financial assets by poverty dynamics group in 2009

Average loan amounts (Thousand Baht)	Chronic poor	Move out of poverty	Move into poverty	Never poor	All
Total areas	10.0	75.0	55.0	190.8	125.2
Central region	10.0	116.3	56.3	241.6	190.6
Northeast region	10.0	57.6	53.3	67.2	60.9
Purpose (% of loans)					
Consumption	75.0	38.5	44.4	24.1	33.1
Farming	25.0	40.4	33.3	67.2	49.2
Business	0.0	15.4	0.0	3.4	8.1
Education	0.0	5.8	0.0	3.4	5.6
Debt repayment	0.0	3.7	22.2	1.7	4.0

Source: Data from the survey

4.8 Household income by poverty dynamic group

4.8.1 Source of household income

The rapid development of the manufacturing sector during the past two decades has provided more employment opportunities for labourers to participate in the non-farm sector. Although farming still serves as the primary occupation of rural households, the proportion of non-farm employment activities increased significantly, as described earlier in Section 4.6.2. The occupational mobility from the agricultural sector to the non-agricultural sector resulted in a structural change of household income across all poverty dynamic groups between 1988 and 2009. These changes in income structure toward non-farm employment were also in line with other studies of developing countries (Rigg, 2006, Haggblade et al., 2007, Baulch, 2011). Ellis and Freeman (2005) also found that non-farm activities accounted for between 40 and 60 percent of household income for people in rural Africa and South Asia.

The survey data in Table 4.23 illustrates that the contribution of non-farm income to total household income had markedly increased in all four groups, although the changing pattern of household income structure was somewhat different for each region.

The proportion of non-farm income increased from 30 percent in 1988 to 70 percent in 2009 for chronic poor households, and this rise could be much attributed to the increase in non-farm waged labourers, accounting for about 30 percent of the total income in both regions. This implies that the income earned by non-farm daily labourers would be uncertain for most chronic poor households. In the Central region, the second most important source of income for chronic poor households was agricultural day wages; however, rice farming constituted the second highest household income for the chronic poor in the Northeast region. Other income, including a monthly allowance for elderly and disabled persons also greatly contributed to household income, pointing to the fact that chronically poor households contained a significant number of elderly and disabled people. The regular salary earned in this group accounted for only 10 percent of the total household income.

There was also a significant increase in the contribution of non-farm income to the moving out of poverty households in both regions over the period, and this was mainly due to the considerable expansion of regular salaried earnings, which served as the largest share of household income in 2009. The income from self-employed business and remittances also increased substantially. There was a large contribution of remittances to the income of those moving out of poverty, especially in the Northeast, which could be explained by an increased trend of labour migrants who search for jobs and work in other areas or other provinces. Many previous studies have also suggested that remittances significantly contribute to poverty reduction in the rural households of Thailand (Krongkaew et al., 1992, Osaki, 2003). Despite the increased importance of the non-farm sector, farming still remained the dominant source of income for those moving out of poverty in the Central region, mainly due to farm waged labourers. As described earlier in Section 4.7, this partly reveals the successful development of farm labourer-hiring activities and the importance of the agricultural sector in reducing poverty in the Central region.

Farm income still served as the main source of income for those moving into poverty, as opposed to other household groups, accounting for almost 70 percent of the total household income. The greatest contribution of around 35 percent came from non-rice crops and livestock. Rice farming and agricultural wages also constituted a large part of this group's income. This suggests that most households who fall into poverty still earn much of their income from farming both rice and other non-rice crops. Income from non-farm activities only increased marginally. Salary earned and self-employed profit only accounted for 2-3 percent, while other income, which mainly included a monthly allowance for elderly and disabled persons significantly contributed to non-farm income.

The percentage of farm and non-farm income was almost identical for the never poor group, contributing 56 and 44 percent respectively of these groups' total household income. This was attributable to the different sources of income between the two regions. Farm income still remained the predominant source in the Central plain, accounting for 64 percent of household income, most of which came from rice and other crops and livestock. However, non-farm income played a major role in the household

income in the Northeast, accounting for more than 70 percent of the total income. The key sources of the non-farm income of never poor households were mainly salaries, wage earnings and remittances.

Table 4.23: Household income composition by poverty dynamics group

	Chronic poor		Move out of poverty		Move into poverty		Never poor		All	
	1988	2009	1988	2009	1988	2009	1988	2009	1988	2009
Per capita income (Baht)	11,886	11,430	10,940	60,972	31,835	17,483	46,565	101,379	27,083	69,112
Per capita income (US dollar)	2,289	1,515	2,273	7,129	5,144	2,112	8,280	10,449	4,930	7,536
All areas										
Total income (real terms) (%)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1. Farm income	*80.1*	*30.8*	*84.8*	*28.7*	*83.3*	*68.3*	*88.0*	*56.4*	*86.6*	*45.1*
1.1 Rice	67.0	17.3	66.9	13.7	62.7	21.8	65.8	26.8	65.8	21.3
1.2 Non-rice and livestock	8.7	7.0	8.1	4.1	14.3	30.3	16.6	22.0	14.4	14.8
1.3 Agricultural wage	4.3	6.5	9.7	8.2	6.3	15.2	4.2	6.9	5.5	7.6
1.4 Rental and interest earned	0.0	0.0	0.0	2.7	0.0	0.9	1.4	0.6	0.9	1.4
2. Non-farm income	*19.9*	*69.2*	*15.2*	*71.3*	*16.8*	*31.7*	*12.0*	*43.6*	*13.4*	*54.9*
2.1 Non-agricultural wage	8.6	30.6	10.3	13.9	11.4	11.0	5.6	5.9	7.1	9.6
2.2 Regular salary	0.0	9.9	1.0	33.7	0.0	3.5	3.0	18.2	2.2	24.0
2.3 Self-employment	0.5	3.0	1.2	9.4	0.9	2.2	1.6	10.9	1.4	10.0
2.4 Remittances	10.8	8.1	2.5	10.0	4.3	3.3	1.7	7.0	2.5	8.1
2.5 Others[1]	0.0	17.5	0.0	4.4	0.0	11.8	0.0	1.7	0.0	3.2

	Chronic poor		Move out of poverty		Move into poverty		Never poor		All	
	1988	2009	1988	2009	1988	2009	1988	2009	1988	2009
Central region										
Total (%)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1. Farm income	*75.0*	*38.9*	*93.7*	*47.6*	*98.0*	*72.6*	*94.7*	*64.1*	*94.4*	*60.5*
1.1 Rice	70.1	12.3	75.5	17.6	76.3	20.7	70.6	30.2	71.3	27.0
1.2 Non-rice and livestock	3.1	9.1	6.5	8.3	19.5	35.0	18.2	26.1	16.9	22.5
1.3 Agricultural wage	1.9	17.6	11.7	15.0	2.3	16.6	4.2	7.7	4.8	9.6
1.4 Rental and earning interest	0.0	0.0	0.0	6.7	0.0	0.3	1.7	0.0	1.4	1.4
2. Non-farm income	*25.0*	*61.1*	*6.3*	*52.4*	*2.0*	*27.4*	*5.3*	*35.9*	*5.6*	*39.5*
2.1 Non-agricultural wage	0.0	25.0	4.3	6.2	0.5	5.5	0.2	2.9	0.6	3.8
2.2 Regular salary	0.0	9.7	0.0	30.0	0.0	5.5	2.2	14.5	1.8	17.8
2.3 Self-employment	0.0	0.0	0.6	7.9	0.8	3.4	1.8	11.9	1.6	10.8
2.4 Remittances	25.0	8.8	1.5	6.4	0.7	3.9	1.1	5.1	1.6	5.4
2.5 Others[1]	0.0	17.6	0.0	1.8	0.0	9.0	0.0	1.4	0.0	1.8

Table 4.23: Household income composition (continued)

	Chronic poor		Move out of poverty		Move into poverty		Never poor		All	
	1988	2009	1988	2009	1988	2009	1988	2009	1988	2009
Northeast region										
Total (%)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1. Farm income	*82.2*	*28.4*	*80.8*	*19.3*	*71.9*	*60.8*	*59.6*	*26.8*	*71.6*	*22.7*
1.1 Rice	65.7	18.8	63.1	9.7	52.2	41.0	45.8	13.7	55.3	13.2
1.2 Non-rice and livestock	11.2	6.4	8.9	2.0	10.3	5.0	9.7	6.5	9.6	3.5
1.3 Agricultural wage	5.4	3.3	8.9	6.9	9.4	12.8	4.1	3.7	6.8	4.7
1.4 Rental and interest earned	0.0	0.0	0.0	0.7	0.0	2.0	0.0	2.9	0.0	1.3
2. Non-farm income	*17.8*	*71.6*	*19.2*	*80.7*	*28.1*	*39.2*	*40.4*	*73.2*	*28.4*	*77.3*
2.1 Non-agricultural wage	12.3	30.6	13.1	17.6	19.9	20.3	28.7	17.1	19.9	18.0
2.2 Regular salary	0.0	14.2	1.5	35.5	0.0	0.0	6.2	32.3	3.0	33.1
2.3 Self-employment	0.7	3.9	1.4	10.1	1.0	0.0	0.8	7.0	1.1	8.8
2.4 Remittances	4.8	7.9	3.0	11.8	7.1	2.4	3.8	14.2	4.0	12.2
2.5 Others[1]	0.0	15.0	0.0	5.6	0.0	16.6	0.0	2.7	0.0	5.3

Note:
[1] Others include monthly allowance granted for elderly, disabled people in rural areas (500 Baht per person), started in 2007.
Source: Data from the survey

4.8.2 Income mobility and income distribution

(1) Income mobility

In this section, income mobility was analysed further in order to ascertain whether households moved upwardly or downwardly following changes in household income over the period. The extent to which households changed their income status or ranking can be described by the conceptual term of relative poverty or so-called income inequality (Haughton and Khandker, 2009). The transition matrix for households based on income quintile is presented in Table 4.24. This matrix helps to provide an understanding of the pattern of income mobility by comparing the household per capita income level in 1988 with that in 2009. Following the quintile transition matrix, the quintiles were ranked in ascending order of per capita income. The lowest quintile (Q1) represents the poorest household group, while the top quintile (Q5) represents the richest. Each row of the matrix shows the distribution of household numbers for each income quintile in 1988.

The transition matrix for households based on the income quintile shows that about 26.5 percent of the poorest group in 1988 remained in the same quintile in 2009. However, the data also confirms that there were substantial movements within the distribution. A high upward mobility of the poorest households accompanied an improvement in the absolute poverty incidence. It appeared that about half of the poorest households in 1988 were able to move up to one of the top three quintiles in 2009. At the other end of the matrix, almost half of the richest households remained in the same quintile, while 10 percent of these appeared to move down and stay in the lowest quintile.

70 of the 240 households or about one third of households on the diagonal did not move between quintiles. The 83 households above the diagonal moved up to higher quintiles, while the 87 households below the diagonal became poorer and moved down to lower quintiles. Overall, this indicates that there was more downward mobility than upward mobility in the transition matrix. Different degrees of mobility were found when considering each region. It appeared that a higher number of households experienced upward mobility in the Northeast region than in the Central region, which suggests that households in the Northeast region significantly improved their income at a relatively faster pace than those in the Central region. This is consistent with the poverty dynamic pattern explained in Table 4.15, in which a greater proportion of households moved out of poverty in the Northeast than in the Central plain.

Table 4.24: Transition matrix for household by quintile in 1988 and 2009 (All areas)

		Quintiles of 2009 per capita household income (%)				
		Poorest	Q2	Q3	Q4	Richest
Quintiles of 1988 per capita household income (%)	Poorest	26.5	22.4	24.5	20.4	6.1
	Q2	27.1	18.8	27.1	14.6	12.5
	Q3	22.9	27.1	22.9	10.4	16.7
	Q4	18.8	18.8	12.5	33.3	16.7
	Richest	10.6	10.6	12.8	21.3	44.7

Source: Data from the survey

Transition matrix for household in the Central region

		Quintiles of 2009 per capita household income (%)				
		Poorest	Q2	Q3	Q4	Richest
Quintiles of 1988 per capita household income (%)	Poorest	20.0	20.0	20.0	40.0	0.0
	Q2	23.1	23.1	7.7	7.7	38.5
	Q3	21.1	31.6	5.3	10.5	31.6
	Q4	13.8	13.8	10.3	41.4	20.7
	Richest	7.3	7.3	12.2	24.4	48.8

Source: Data from the survey

Transition matrix for household in the Northeast region

		Quintiles of 2009 per capita household income (%)				
		Poorest	Q2	Q3	Q4	Richest
Quintiles of 1988 per capita household income (%)	Poorest	27.3	22.7	25.0	18.2	6.8
	Q2	28.6	17.1	34.3	17.1	2.9
	Q3	24.1	24.1	34.5	10.3	6.9
	Q4	26.3	26.3	15.8	21.1	10.5
	Richest	33.3	33.3	16.7	0.0	16.7

Source: Data from the survey

(2) Income distribution

The degree of income distribution and its changes can be described in terms of income share by quintile, which ranks the households from poorest to richest and shows the percentage or share of income attributable to each quintile. It can be seen from Table 4.25 that there was a significant gap between the income of the richest and poorest group, which suggests that the income distribution appears to be highly skewed among quintile groups. The inequality had widened over time, which indicates that, although the average income increased in real terms, the benefits of income growth were distributed unequally to high and low income households. Income of the richest

households tend to grow at much higher rate than income of the poorest as shown in Figure 4.7. Therefore, there was a decline in the income share of the poorest households in the lowest quintile and an increase in the share of the richest group in the top quintile. In 1988, the lowest 20 percent of households (Q1) shared 5 percent of income, while the top 20 percent of households (Q5) owned about 50 percent of income. Thus, the income share of the richest group was about 10 times higher than that of the poorest. In 2009, the poorest shared less of the total income; therefore, the income ratio between the richest and the poorest increased by 15 times. This confirms that the distribution of income became more uneven over time.

Similarly, there was also a steady growth in income inequality when measured by the Gini coefficient, the most widely-used measure of inequality (Haughton and Khandker, 2009). This was derived from the Lorenz curve that ranks households from the poorest to the richest and shows the cumulative proportion of households (from poor to rich) on the horizontal axis and the cumulative proportion of per capita household income on the vertical axis. The Gini coefficient of inequality is valued from zero (representing perfect equality) to one (representing perfect inequality). In this study, the Gini index increased from 0.446 in 1988 to 0.4831 in 2009, which indicates a worsening income distribution. When comparing regions, it was found that the income distribution in the Central region worsened compared to the Northeast.

In addition, a Gini decomposition analysis by income source[50] developed by Lerman and Yitzhaki (Lerman and Yitzhaki, 1985) was employed to gain a better insight into the source of the growing income inequality. The findings shown in Table 4.26 suggest that the increase in Gini was largely driven by the increase in the inequality of rice income. The Gini from this income source almost doubled from 0.484 in 1988 to 0.811 in 2009 indicating a worsened income distribution. This can partly be explained by the disparity in land holding and rice yields between the never poor and chronic poor households, as explained earlier in Section 4.7.3. Only a small number of farm

[50] The Gini decomposition approach enables the examination of three components of income inequality. The influence of any income component upon the total income inequality depends on (1) The share of sources of total income (S_k) which represents the importance of the income source with respect to total income, (2) The source of Gini (G_k) which represents the equal or unequal distribution of income sources, and (iii) The correlation of income from source k with the distribution of total income (R_k) which represents how the income source and the distribution of total income are correlated.

households, particularly those in irrigated areas, earned greater benefits by having access to irrigation and adopting high-yielding modern varieties and modern agricultural machinery that enabled them to grow rice many times a year. Thus, these better-off farmers could earn a higher income and were able to buy additional land. However, some farm households, especially those in the rain-fed area were only able to grow a single rice crop per year in the wet season and were forced to leave their lands fallow for the rest of the year. This was mainly due to weather uncertainty and the scarcity of water resources, especially during the dry season. These factors limited the cropping pattern which, in turn, caused some households to suffer substantial losses from rice and crop farming, so that they had to sell some of their land to repay the debt they had incurred. This reflects that there were the concentration of land holding among a small and non-poor households resided in irrigated areas of the Central region. While farming still remained predominant income source of those rural population in the Central region, the income distribution tends to be widened than the Northeast where most population relying their living on non-agricultural employment activities.

Income earned from non-agricultural sources appears to be relatively less unequal compared to farm income. Over the survey period, the Gini index of non-agricultural income declined from 0.815 to 0.514. The improvement in income inequality was largely constituted by non-agricultural wage and salary components. The implication of the findings in this section is that it is important to enhance the opportunities for poor households in Thailand to be able to participate in non-agricultural employment activities in order to help to improve their income and reduce income inequality.

Table 4.25: Share of household income by quintile

	All areas		Central		Northeast	
Quintiles	1988	2009	1988	2009	1988	2009
Poorest	5.1	3.6	5.2	3.3	4.0	4.2
Q2	8.9	8.3	8.7	8.1	7.7	9.4
Q3	13.4	13.6	13.0	13.1	31.1	15.9
Q4	22.0	21.3	21.8	20.8	18.2	24.8
Richest	50.6	53.3	51.3	54.8	38.9	45.7
Gini coefficients	0.4460	0.4831	0.3859	0.4594	0.3638	0.3872

Source: Data from the survey

Figure 4.7: Quintile income groups: real per capita income, 2009 prices

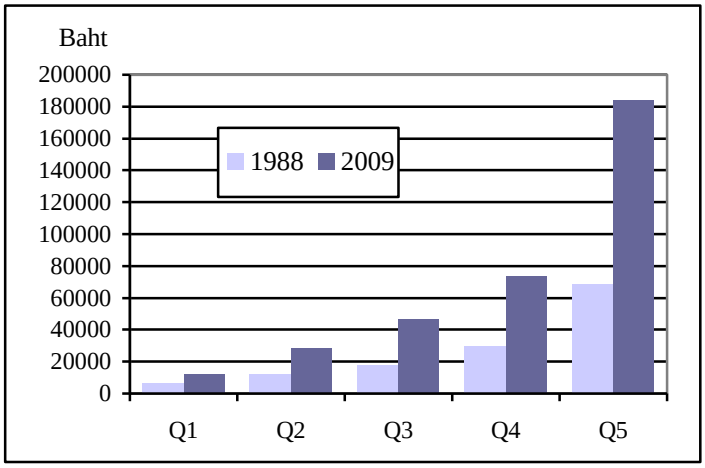


Table 4.26: Components of Gini index decomposition by income source

	1988			2009		
	Share of income (S_k) (% to total income)	Component Gini (G_k)	Correlation of income with the distribution of total income (R_k)	Share of income (S_k) (% to total income)	Component Gini (G_k)	Correlation of income with the distribution of total income (R_k)
Farm income	86.6	0.479	0.95	45.1	0.707	0.81
- Rice	65.8	0.484	0.90	21.3	0.811	0.70
- Non-rice and livestock	14.4	0.802	0.74	14.8	0.893	0.74
- Agricultural wage	5.5	0.774	0.29	7.6	0.892	0.48
Non-farm income	13.4	0.815	0.40	54.9	0.514	0.70
- Non-farm wage	9.3	0.896	0.38	33.6	0.625	0.55
- Self-employed	1.4	0.976	0.45	9.9	0.911	0.67
- Remittances	2.5	0.925	0.20	8.1	0.719	0.27
Total	100.0			100.0		

Source: Data from the survey

4.9 Conclusion

The main findings of this chapter illustrate the key socio-economic characteristics of the sampled households and the asset endowments in each dynamic category. Several important observations from the characteristics of each dynamic group are summarised below.

Firstly, the disadvantaged position of the chronic poor is evident in respect of the lowest mean value of all asset categories, such as the number of earners, level of education of working members, land size, cultivated areas and physical assets. The economic activities in which the chronic poor were engaged also showed a significant change. The chronic poor's declining dependence on rice farming as a source of income is particularly important. There has been a significant increase in the income share of non-agricultural waged labour over time. Nevertheless, the transition from farm to non-agricultural waged labour activities for chronic poor households is limited to the lower productivity end of non-farm activities, such as construction labour and day wage work in factories. This suggests that chronic poor households tend to experience uncertain earnings from non-farm daily labour. Chronic poor households should not be regarded as being an incapable group of people who 'have nothing or do nothing' for a living. They have experienced a diversification of occupational activities and structure of income due to the economic transformation of rural development. However, with a low initial level of asset base, the small number of working members and increased elderly members within a household have caused chronic poor households to experience a very slow rate of progress in the accumulation of assets and also restricted them from participating in low-wage and low-skilled livelihood activities in non-agricultural sectors compared to other groups. Chronic poor households also had the oldest household heads and the highest rate of dependency; they were also faced with a substantial expansion of the dependency ratio over the study period, mainly due to having a higher proportion of elderly members. Nevertheless, the proportion of working age members had considerably declined due to out-migration from their hometown to the urban areas and the capital, Bangkok. This shows that chronic poor households had not only been restricted by having the lowest level of asset holdings compared to other

poverty groups, but had also been mainly affected by an increase in the ageing population and a dwindling labour force.

Secondly, in terms of making progress with an asset base, the moving out of poverty households experienced a significant increase in asset accumulation over time. These increases included an increasing numbers of working members completing secondary and the university levels of education, cultivated and irrigated areas, agricultural assets and financial capital. Over the period, the moving out of poverty group of households experienced approximately a six-fold increase in their per capita income, which was mainly attributed to non-farm income, specifically a considerable expansion of regular salaried earnings, self-employed businesses and remittances. Remittances made a large contribution to the income of the moving out of poverty group, which could be explained by the increased trend of labour out-migrants.

Thirdly, there were some important differences between the never poor and the moving into poverty households. While the never poor experienced an increase in cultivated and irrigated areas, the moving into poverty group was faced with the highest depletion of rice-cultivating areas, irrigated areas and rice yields. However, these households still earned much of their income from farming both rice and non-rice crops. In addition, working members in the moving into poverty households tended to move from being farmers into agricultural waged employment. In terms of other characteristics, the demographics have been unfavourable in this household group. The moving into poverty has a higher rate of dependency than the never poor and the corresponding total averages, which is mainly due to an increase in the proportion of elderly members. All the descriptive data suggests that moving households into poverty is not only caused by depleted land, but higher dependency is also an important factor that influences these households' declining fortunes.

CHAPTER 5

Analysis of the determinants of poverty dynamics

5.1 Introduction

When analysing poverty dynamics, it is not only important to consider who becomes poor, but also why or how they move into or out of poverty, and why some often remain poor. Most recent studies complement a descriptive analysis with a quantitative multivariate analysis of poverty dynamics (Lawson et al., 2006). Following the descriptive analysis already described in Chapter 4, this chapter further analyses the key determinants of each dynamic category of poverty using quantitative estimation methods.

A number of approaches are proposed in the literature for modelling poverty dynamics in order to understand the factors associated with chronic poverty, as well as moving into and out of poverty. Apart from the descriptive analysis analysed in Chapter 4, there are three main econometric estimation models under the multivariate approach for panel data to analyse the factors that affect changes in household poverty and identify the significance of these factors for households (Lawson et al., 2006, Baulch, 2011). The first approach is the discrete dependent variable model of poverty status, while the second is the continuous model of changes in living standard variables, such as income and expenditure and the third is the quantile regression model.

This chapter aims to provide the empirical results of the key factors that influenced poverty dynamics in rural Thailand for the period between 1988 and 2009. The chapter is organised as follows: the first section provides an overview of the specification of the three multivariate analysis models, namely, the discrete regression model, the continuous model, and the quantile regression model. The next section presents the estimated results of the determinants of poverty dynamics of the three models, while the last section concludes the key findings in this chapter.

5.2 Modelling poverty dynamics

A number of models have been used in the literature to understand the factors associated with poverty dynamics. An analysis of poverty dynamics is mainly based on multivariate regression methods in an attempt to identify the determinants of poverty dynamics at the household level, using reduced form models of various structural relationships that affect poverty (Baulch and Hoddinott, 2000, Addison et al., 2009). A quantitative analysis for modelling poverty dynamics consists of two forms, namely, discrete and continuous regression models (Lawson et al., 2006). The discrete modelling approach seeks to estimate poverty transition on the basis of a poverty line, while the continuous approach estimates the welfare function based on a continuous measure of household welfare, such as income or expenditure. Both the discrete and continuous dependent variable approaches were applied to the panel data set in this study, with a view to providing a better understanding of the factors associated with households' poverty dynamics. Similar sets of explanatory variables were used for analysis in both models.

Explanatory variables that are likely to influence the probability of a given household to belong to a certain poverty dynamics outcome in the model consist of three sets of factors: (i) initial household characteristics and assets in 1988, (ii) changes in exogenous variables between the two periods, and (iii) shock variables. These sets of variables follow the empirical literature reviewed in Section 2.2.2 of Chapter 2. Determining poverty dynamics using both the initial level and changes in variables can be explained by the fact that households that move into poverty households, for example, may be affected by the factors that made them non-poor during the first period in 1988, and/or by changes in their conditions and shocks that cause them to move into poverty in the second period in 2009.

Similar sets of explanatory variables are used in each model, most of which are based on household characteristics and households' asset endowment in the initial year, 1988. A very small number of variables measure changes over the period, each of which can be reasonably considered to be exogenous. Key likely explanatory variables

suggested by the descriptive analysis in Chapter 4 include the following sets of initial conditions and change variables:

- A set of demographics variables, including age of household head, female head dummy, dependency ratio, household size, and number of working age members.
- A set of education, including the average level of education of the household head and working members.
- A set of employment, including farm, non-farm, unemployed.
- A set of land assets, including farm size, cultivated land, irrigated area, rice yield.
- A set of physical assets, including agricultural and non-agricultural equipment.
- A set of shock dummies including death of household head, death of household members, illness of income earners, natural disasters, migration
- A set of village location dummies
- A set of changes in household demographic variables, including change in household size, change in occupation from farm to non-farm, change in household head's gender from male to female, change of household head.

It is worth noting here that in the study of poverty dynamics using panel regression analysis, the endogeneity issue between poverty changes and other household variables is one of the key challenges and needs be addressed. Wooldridge (2006) stated that endogenous explanatory variable in a multiple regression model that is correlated with the error term, either because of an omitted variable, measurement error, or simultaneity. Due to endogeneity problem, the model estimation may experience biasness and inconsistency. Many such variables at the household level, for example, changes in rice yields, physical and land assets, may strongly and directly link and become endogenous to poverty transitions. This is because those assets reflect households' successive choices of saving and accumulation. To avoid endogeneity or reverse causality, only some types of changes considered not to be endogenous are used in this regression model, including changes in demographic variables, such as change of

household head, change in household size, as well as changes in employment (see Woolard and Klasen (2004)).

5.2.1 Model of discrete dependent variable

The discrete modelling approach is a well-recognised approach for modelling poverty dynamics, since it enables the identification of the more prevalent characteristics in each category of poverty dynamics (Baulch, 2011). The dependent variable in the discrete model is the dynamic poverty status. Following the econometric modelling techniques used in many poverty dynamic studies based on two-waved panel data sets (see for example Lawson et al., 2006, Baulch and Dat, 2011), this study employs two specific models of discrete variables commonly used, namely, the multinomial logit model and the probit regression model.

(1) Multinomial logit regression model

A multinomial logit regression model is a useful tool to model nominal outcome variables or a single outcome which has several (more than two) unordered alternatives, such as occupational choices, choice of health plan and transportation modes (Greene, 2003, Wooldridge, 2002).

The multinomial logit model is used to determine the probability that household i will experience one of the j outcomes stated below. This probability is given by following equation:

$$P(Y_i = j) = \frac{e^{\beta_j' x_i}}{1 + \sum_{k=1}^{J} e^{\beta_k' x_i}}, \text{ for } j = 1, 2, ..., J \text{ and } P(Y_i = 0) = \frac{1}{1 + \sum_{k=1}^{J} e^{\beta_k' x_i}} \quad (5.1)$$

In the above equation, $P()$ is the probability of each outcome, Y_i is the outcome experienced by household i, β_k is the set of coefficients to be estimated and x_i *is an* independent variable that denotes a set of aspects specific to the individual household, as well as to its choices. Since the probabilities must sum to one, β_0 is set to zero (i.e. β_0 has been defined as the base category) in order to identify the model (Greene, 2003).

However, the parameters β_k in the multinomial model are difficult to directly interpret the impact of change of x_i on the outcome variable, Y_i (ibid). Therefore, for ease of interpretation, the results, $\beta_{k,}$ are reported in terms of the marginal effect,[51] which shows the effect of a one-unit change in explanatory variable, x_i on the probability of being in a particular poverty dynamics category relative to a base category or the log-odds ratio of the alternative *k* to the base category, 0. The marginal effect of probability of x_i on the probability of choosing alternative outcome *k* can be expressed as follows:

$$\frac{\partial P(Y_i = k)}{\partial x_i} = P(Y_i = k)\left[\beta_k - \sum_{j=0}^{J} P(Y_i = j)\beta_j\right] \quad (5.2)$$

The equation 5.2 suggests that the marginal effect of x_i on alternative k involves not only on the parameter β_k but also on the ones of all other alternatives.

In this poverty dynamic analysis, a multinomial logit regression model is estimated to predict the probability that a given household will belong to any of the poverty dynamics outcomes or experience changes in its poverty status between the two study periods, 1988 and 2009 (see for example Glewwe et al., 2000, Justino and Litchfield, 2004, Lawson et al., 2006, Baulch and Dat, 2011). The poverty dynamics outcomes between the two periods in the model can be classified into four categories: (i) chronic poor (poor in both periods), (ii) moving out of poverty (poor in 1988 and non-poor in 2009), (iii) moving into poverty (non-poor in 1988 but becoming poor in 2009), and (iv) never poor (non-poor in both periods).

(2) Sequential probit regression model

While the multinomial logit model has become the standard model used for poverty dynamics analyses, it has some limitations; thus, it is not the only model used for this purpose. The multinomial logit model suffers from applying unordered categorical outcomes that do not take the natural order of poverty dynamics into account (Baulch, 2011). In addition, the multinomial logit model is predicted on the assumption

[51] The marginal effect of more than one means that a one unit increase in variable x increases the probability of the household being in a particular poverty dynamic category relative to a base category, whereas a marginal effect of less than one implies a decrease in the probability.

of the independence of irrelevant alternatives. According to Greene (2003), the independence of irrelevant alternatives assumption states that the odd ratio for one category in the multinomial logit model is independent of the other odd ratios for other categories. This is a convenient property with regard to estimation, but it is not considered attractive from a behavioural viewpoint (ibid). To overcome these limitations, the probit regression model is a different method for testing the discrete choice of poverty dynamics. This is because, for example, the reason for households moving out of poverty could relate to two sets of factors: those that made them more likely to become poor in the first period, 1988, and those that enabled them to escape from poverty in the second period, 2009. The factors associated with whether or not a household is poor to begin with in the initial period may be different from those associated with changes in the household's poverty status over time. Therefore, the probit model is considered to be an appropriate method for considering this sequential dependent variable (see for example Bhide and Mehta, 2004, Lawson et al., 2006)

The sequential probit model consists of a series of three probit models estimated in the order of poverty transition, namely, (i) non-poor or poor in 1988, where the dependent variable takes the value of 1 if the household is poor in 1988 and 0 if otherwise. (ii) non-poor or poor in 2009, given that the household was poor in 1988. The dependent variable takes the value of 1 if the household is poor in 2009 (chronic poor) and 0 if otherwise (moving out of poverty). (iii) non-poor or poor in 2009, given that the household was non-poor in 1988. The dependent variable takes the value of 1 if the household is poor in 2009 (moving into poverty) and 0 if otherwise (never poor). Similar to the multinomial logit model, the results from the probit model are also interpreted in terms of the marginal effects of each variable. The analysis is based on the assumption that the probability of being poor can be estimated using a probit model that contains the same independent variables, x_i used in Equation 5.1, where e follows a standard normal distribution and Φ is the cumulative distribution function of standard normal distribution.

$$P(Y_i = 1|x_i) = P(Y_i^*>0) = P(e> -x_i\beta) = = 1-\Phi(-x_i\beta) = \Phi(x\beta) \quad (5.3)$$

Similar to the multinomial logit model, the parameters β are difficult to interpret directly. Therefore, the results, β are reported in terms of the marginal effect, which shows the effect of a one-unit change in explanatory variable, x_i on the probability of being in a particular category of poverty dynamics. The marginal effect of the probability of x_i can be expressed as follows:

$$\frac{\partial P(Y_i = 1 | x_i)}{\partial x_i} = \partial G(x_i \beta) = \frac{\partial \Phi(x'_i \beta)}{\partial x_i} = \Phi(x'_i \beta)\beta_k \tag{5.4}$$

However, the discrete model faces some criticism. The multinomial logit model relies on a dependent variable, which distinguishes households into four dynamic categories according to the transition matrix using the poverty line cut-off. The difficulty arises if a household's income is close to the poverty line, when only relatively small changes in income may be associated with moving household into or out of poverty. This suggests a disadvantage in terms of which poverty line to use, as well as significant loss of information about the household's welfare variable, either income or expenditure. This is also similar to the bivariate poverty probit and logit, which are criticised for reducing a continuous variable to two discrete categories, namely, poor and non-poor (Ravillion, 1996).

5.2.2 Model of continuous dependent variable

As mentioned above, although they are informative for analysing the determinants of poverty dynamics via discrete models, the multinomial logit and probit models are subject to the limitation that they reduce a continuous dependent variable to discrete categories of poverty. This results in a loss of information about the dependent variable and is also highly sensitive to the level at which the poverty line is set (Ravillion, 1996). To avoid these limitations of discrete models, one potential response is, therefore, to apply the second model, a continuous variable approach to understand the determinants of changes in household welfare. The continuous model measures changes in household welfare, such as income or expenditure, based on a panel regression estimation.

Following the continuous model used by many poverty dynamics studies (Grootaert et al., 1995, Woolard and Klasen, 2004, Lawson et al., 2006, Justino et al., 2008, Lohano, 2011), this research applies the basic idea of the standard household utility maximisation model, which relies on household income as a money metric measure of utility. The principal assumption of this model is that household income is a function of household assets, such as physical and human assets and the economic environment in which these assets can be utilised to generate income. Moreover, household income also additionally depends on the demographic setting, which indicates the number of household members who have to share assets and those who are able to generate income. This can be explained by the fact that real per capita income serves as a key welfare indicator of household poverty. Therefore, changes in welfare over time are attributable to changes in household income (via the numerator) and/or changes in household size and demographic composition (via the denominator) (Woolard and Klasen, 2004).

In the model, the dependent variable is change in the real per capita household income between 1988 and 2009 and household endowments and characteristics serve as similar explanatory variables as those that appear in the discrete models. The model is presented in the following reduced form:

$$\Delta \ln(\frac{E_i}{AE_i}) = f(A_i, \Delta A_i, R_i, \Delta R_i) \qquad (5.5)$$

Equation 5.5 describes households' income changes as a function of both their initial level of endowment and changes in that endowment[52] where E_i is the real adult equivalent income of household i, AE_i is number of adult equivalent household members[53] in household i, A_i represents the asset endowment of household i including education, employment, land, physical assets, and R_i is a set of characteristics that summarise the economic and demographic environment in which household i operates,

[52] In the case of initial conditions variables, the figures pertain to 1998, while the change variables were calculated by subtracting the 1988 values from 2009 values.

[53] The analysis adopts the adult equivalence scale of the World Health Organization (WHO), used in the poverty dynamics study in Pakistan Baulch and Mcculloch (2002) to adjust for differences in household composition.

and thus determines the returns on the assets the household possesses. The model also includes dummy variables for the gender of the household head, village dummies and shock dummies identified by the households.

5.2.3 Quantile regression model

In addition to estimating the discrete and continuous income growth models in Sections 5.2.1 and 5.2.2, this study also simultaneously estimates a quantile regression to determine the impact of change in household characteristics and assets on different quantiles of the overall distribution of household income. This is due to the limitations of both the discrete and continuous regression models, as stated earlier. One of the criticisms of the continuous model described above is that the independent variables are estimated at the mean of the dependent variables. However, it is argued that the effect at the mean may not represent other parts of the distribution of income. The impact of factors on household welfare may vary, depending on the location of the household in the entire distribution of welfare. For example, it is likely that the effect of having additional household members may have a much stronger impact on the welfare of households at the bottom of the distribution rather than at the top. Therefore, a quantile regression model is employed to explore whether or not various factors have more impact on poorer households (see for example Baulch and Dat, 2011).

Given a real valued random variable Y, with distribution function F(y)= P(Y>y), the τ^{th} quantile of Y can be defined as follows:

$$Q_\tau(Y) = F^{-1}(\tau) = \inf\{Y : F(Y) \geq \tau\}(1) \qquad (5.6)$$

where $\tau \in [0,1]$ represents the percentile of household income distribution in the initial year, Y_{ji} is log per capita income

When defining the loss function as $\rho_\tau(u) = u*(\tau - I(u<0)$ a specific quantile can be found by minimising the expected loss of Y-u with respect to u, $\min_u E(\rho_\tau(Y-u)$

5.3 Estimated results of the determinants of poverty dynamics

5.3.1 Results of the multinomial logit model

The marginal effect result[54] of the multinomial logit model in Table 5.1 shows the interesting impacts of household characteristics and assets on poverty dynamics in the 1988 and 2009 survey data. As described in Section 5.2.1, the results are interpreted in terms of the marginal effects of each variable, which show a one unit change in the explanatory variable on the probability that a household is in a particular poverty dynamic category, holding all other variables constant. The marginal effects are estimated relative to the never poor group as the base category. The base category is the median values in 1988 for never poor households living in irrigated areas and having household members who completed lower secondary school or a higher level of education.

The results of the model suggest that the initial household endowments found to be the most significant determinants of poverty dynamics include demographics, education, land and employment. In terms of demographic factors, household size is more likely to be positively associated with chronic poverty, but also with moving out of poverty. This relationship can be explained further by the effect of the dependency ratios. In addition to size, household composition is another important attribute to poverty dynamics. If an increase in household size accompanies an increase in the number of working-age members, (for example, when children have grown up and started to work), households are less likely to remain in chronic poverty. The results from the model show that the number of working-age members in households is negatively associated with chronic poverty. Households with female heads are more likely to move into poverty. This suggests that changing the household head from male to female can lead to households becoming vulnerable to poverty. The majority of female heads of rural households are widows, who normally become household heads at a very old age; therefore, there are fewer opportunities for them to participate in the labour market, which makes them particularly vulnerable to moving into poverty. This

[54] The marginal effect of a unit change (from zero to one) is shown for the dummy variables, while the marginal effect of one standard deviation change (from minus one-half to plus on-half) is presented for the continuous variable.

relationship is also consistent with theoretical understandings and empirical studies about gender and poverty in Thailand (Deolalikar, 2002b), as well as in other developing countries (Moghadam, 2005, King et al., 2007).

Education is very likely to be a strong causal influence on a household's poverty status. According to the estimation, the average number of years of education of working members has a negative impact on the likelihood of a household being chronically poor, as well as moving into poverty. Relative to households with working-age members who have completed university level, a one unit change in the number of working members who have only completed their education at primary school level increases the probability of a household to be chronically poor, moving into as well as out of poverty. This may reflect the fact that most rural people in 1988 had completed the compulsory primary education; therefore, there was no significant difference in the effect of the number of working members who finished primary education on the probability of remaining in chronic poverty and moving into and out of poverty.

Land-related factors also have a relatively strong impact on households' poverty dynamics, particularly on moving them out of chronic poverty. Households with initial larger rice-cultivating areas and irrigated land, as well as those earning higher rice yields have a decreased probability of being chronically poor. In addition, increasing rice yields also tends to increase the probability of moving out of poverty. However, a change in farm size has a statistically insignificant effect on the probability of all poverty dynamic categories. This may reflect the fact that an expansion of land size seems not to have provided any further benefits to households during the study periods. Land consolidation has taken place in Thailand since 1975 when the agricultural land reform programme[55] was implemented, and there is now relatively little arable land left to be reallocated or consolidated. As mentioned in Section 4.3.3 of Chapter 4, the average farm size of households declined significantly over time, particularly in the Northeast region. In terms of occupation, if greater numbers of working-age members

[55] The Agricultural Land Reform Act is taken to mean the "Redistribution of land for farming and residential uses by allocating state land or, land purchased or expropriated from landowners who do not themselves cultivate or who own land in excess of what is stipulated by the Agricultural Land Reform Act of 1975 to farmers who are landless or do not have sufficient land for cultivation, and to farmers' institutions by means of lease and sale.

are engaged in non-agricultural works, this will decrease the probability for households to be chronically poor or move into poverty. However, the number of working-age members employed in the farm sector and the number of unemployed members is positively associated with the probability of moving households into poverty.

Both covariate and idiosyncratic shocks also have a significant effect on the poverty dynamic category. Shocks at the household level, including the death of a household head, have a positive effect on the probability of being chronically poor. Shocks at the village level are also important, with floods increasing the probability of being chronically poor, while drought increases the probability of moving into poverty. In terms of the changes in variables over the period, it appears that only the number of children and elderly have a positive relationship with chronic poverty, while a change of sex of household head is likely to increase the probability of being chronically poor.

There is also some association between the poverty dynamic status and village dummies, which suggests the importance of geographical differences. The rain-fed village in the Central region (SP2) and the drought-prone village in the Northeast regions (KK3) are significantly more likely to move into poverty over the period. On the contrary, those households in the flood-prone villages in the Central region (SP3) experience very strong effect with households being more likely to move out of poverty. These results are consistent with the geographical pattern of poverty incidence rates classified by villages. The flood-prone villages in the Central region (SP3) experienced the greatest improvement in poverty reduction, mainly due to the increasing rice intensity. Farmers in the villages changed from growing only one rice crop in the wet season to two rice crops in the dry season. They also diversified their income sources during the wet season, from rice growing to shrimp farming.

Table 5.1: Results of the multinomial logit model with base equal to never poor, 1988 and 2009

Pseudo R2 = 0.6113
LR chi2(114) = 339.18

	Chronic poor		Moving out		Moving into		Never poor
Variables	Marginal effect	T ratio	Marginal effect	T ratio	Marginal effect	T ratio	Marginal effect
Constant	2.6380		5.8975	1.74*	24.7968	2.57***	
Demographics							
Age of head	0.0007	1.52	-0.0010	-0.11	-0.0002	-1.85*	0.0009
Female head	0.0003	0.79	0.0563	1.46	0.2732	3.21***	-0.3295
Dependency ratio	0.0002	1.76	-0.0011	-0.43	0.0001	2.12	0.0011
Household size	0.0075	2.17**	0.2223	2.19**	0.0009	1.20	-0.0231
Working members	-0.0191	-2.99***	-0.2045	-1.46	-0.0039	-2.39**	0.1064
Elderly	0.0083	0.77	0.0085	0.04	0.0028	1.10	-0.0093
Education							
Education of household head	0.0084	2.63***	-0.0217	-0.44	0.0019	2.15**	0.1209
Education of household members	-0.0130	-2.3**	-0.0629	-0.71	-0.0042	-2.64***	0.0642
Not complete primary	0.0100	2.21**	-0.4023	-2.17**	0.0024	1.86*	-0.0034
Primary	0.0121	3.31***	0.2258	2.59***	0.0026	2.39**	-0.1271
Lower secondary	0.0176	1.44	0.0882	0.50	-0.0039	-1.00	-0.0899
Land							
Farm size	-0.0409	-1.67*	-0.3121	-0.55	0.0290	1.33	0.3159
Cultivated land	-0.0812	-2.42**	-0.1469	-0.26	-0.0200	-2.17**	1.4682
Irrigated area	-0.0373	-2.19**	-0.9650	-1.68	-0.0142	-2.51**	0.3689
Rice yield	-0.0070	-2.38**	0.3707	3.18***	-0.0008	-1.39	-0.1714
Physical asset							
Agricultural asset	-0.0012	-1.29	-0.0847	-1.89**	-0.0008	-1.78*	0.0848
Non-agricultural asset	-0.0021	-1.14	0.0371	1.17	-0.0007	-1.39	-0.0368
Occupation							
Farmer	-0.0016	-0.33	0.0485	0.7	0.0031	2.69***	-0.2484
Non-farm workers	-0.0073	-2.15**	0.0321	0.5	-0.0018	-1.86*	-0.0313
Unemployed	-0.0118	-1.11	0.0765	0.37	0.0070	2.59***	-0.1754
Shock dummy							
Death of household head	0.0528	2.06**	0.1658	0.89	0.0009	1.24	-0.1712
Death of household members	0.0140	0.87	0.0680	0.31	-0.0020	-1.42	-0.0694
Illness	0.0239	1.38	-0.0834	-0.54	-0.0010	-1.13	0.0310
Flood	0.0109	1.93**	-0.1943	-0.74	0.0001	-0.12	0.1954
Drought	0.0006	-0.03	-0.0694	-0.37	0.0437	2.24**	0.0489
Migration	-0.0044	0.53	0.4573	1.88**	-0.0008	0.89	-0.0569

Variables	Chronic poor		Moving out		Moving into		Never poor
	Marginal effect	T ratio	Marginal effect	T ratio	Marginal effect	T ratio	Marginal effect
Change variables							
Change sex of household head	0.0249	1.84*	0.2089	1.33	0.0212	3.25***	-0.2326
Change of household head	-0.0060	-0.82	-0.1063	-0.57	-0.0093	-0.91	0.0075
Change in number of children	0.0149	2.72***	-0.0123	-0.12	0.0010	0.93	0.0108
Change in number of elderly	0.0123	2.18**	0.1976	1.29	0.0024	1.76	-0.1988
Village dummy							
SP2	-0.0058	-1.18	-0.6924	-1.93**	0.0283	3.03***	0.6933
SP3	0.0599	1.34	0.5517	3.36***	-0.0030	-0.9	-0.5677
KK2	0.0007	-0.4	-0.6911	- 2.16**	-0.0561	-2.67***	0.6916
KK3	-0.0048	-1.14	-0.6017	-1.79*	0.0044	2.36**	0.6022

Note: *** Significant at 1% level ** Significant at 5% level * Significant at 10% level

5.3.2 Results of the probit regression model

Using the probit model, the factors associated with whether or not a household is poor in the initial year are examined separately from the factors associated with changes in the household's poverty status over the period. The results of the probit model are illustrated in Table 5.2 below. The sequential probit model consists of three separate probit models. Firstly, the dependent variable takes the value of 1 if the household was poor in 1988 and 0 if otherwise the household is not poor in 1988. The likelihood of a household being poor in 1988 is significantly negatively associated with cultivated areas and rice yields. Households in the flood-prone villages in the Central region are also likely to have been poor in 1988.

Secondly, given conditional on a household was poor in 1988, the dependent variable takes the value of 1 if the household is poor in 2009 (known as being chronically poor) and 0 if the household is not poor in 2009 (known as moving out of poverty). Age of household head is positively associated with remaining in chronic poverty. Education of household head and numbers of working members having less

than primary education or at least primary education are also significantly more likely to be chronically poor. In addition, the increasing growth rate of children in the household is also positively associated with chronic poverty. However, the results from the second probit model suggest that households with higher levels of physical assets, both agricultural and non-agricultural, are more likely to be able to escape poverty.

Thirdly, given that a household was non-poor in 1988, the dependent variable takes the value of 1 if the household is poor in 2009 (known as moving into poverty) and 0 if the household is also non-poor in 2009 (known as being never poor). Moving into poverty is positively associated with demographic-related factors, including the dependency rate and households with female heads. However, it is negatively associated with the number of working-age members in a household. Generally, these results from the probit regression are consistent with those of the multinomial logit model.

Table 5.2: Results of the probit regression model, 1998 and 2009 panel, reporting marginal effects

	Pseudo R2 = 0.4861		Pseudo R2 = 0.5485		Pseudo R2 = 0.5305	
	Chi squared = 161.6		Chi squared = 64.55		Chi squared = 54.88	
	Poor/Not poor 1988		Poor or Not poor in 2009 conditional upon being poor in 1988		Poor or Not poor in 2009 conditional upon not being poor in 1988	
Variables	Marginal effect	Z	Marginal effect	Z	Marginal effect	Z
Demographics						
Age of head	0.0106	2.02**	0.0018	1.94**	0.0000	0.15
Female head	-0.0457	-0.28	-0.0055	-0.39	0.1922	1.98**
Dependency ratio	-0.0005	-0.68	0.0001	0.55	0.0002	1.89*
Household size	0.1473	2.31**	-0.0105	-1.07	-0.0108	-1.75
Working members	-0.1023	-1.46	-0.0159	-1.29	-0.0127	-1.74*
Elderly	-0.1387	-1.18	-0.0125	-0.64	-0.0050	-1.45
Education						
Education of household head	0.0015	0.04	0.0158	2.45**	-0.0015	-1.09
Education of household members	-0.0457	-0.86	-0.0082	-1.00	-0.0018	-1.02
Not complete primary	0.1979	2.03	0.0351	2.11**	0.0002	0.10
Primary	0.0958	1.83*	0.0296	2.72***	0.0004	0.23
Lower secondary	0.0569	0.49	0.0464	1.16	0.0007	0.21

	Poor/Not poor 1988		Poor or Not poor in 2009 conditional upon being poor in 1988		Poor or Not poor in 2009 conditional upon not being poor in 1988	
Variables	Marginal effect	Z	Marginal effect	Z	Marginal effect	Z
Land						
Farm size	-0.5347	-1.39	-0.0587	-1.3	0.0001	0.04
Cultivated land	-0.9174	-2.35**	0.0386	0.81	-0.0011	-0.81
Irrigated area	-0.0718	-0.24	0.0307	0.67	-0.0007	-0.60
Rice yield	-0.2350	-3.27***	-0.0071	-0.91	-0.0008	-0.36
Physical asset						
Agricultural asset	-0.0489	-1.59	-0.0098	-1.88*	0.0000	-0.04
Non-agricultural asset	0.0276	1.23	-0.0045	-1.61*	0.0003	0.41
Occupation						
Farmer	-0.0163	-0.34	-0.0094	-1.43	0.0002	0.20
Non-farm workers	-0.0051	-0.12	0.0070	1.22	0.0010	0.76
Unemployed	-0.0917	-0.61	0.0197	1.43	-0.0020	-0.40
Shock dummy						
Dead of household head	-0.0154	-0.11	0.0157	0.78	0.0005	0.11
Dead of household members	0.1338	0.86	0.0273	0.75	-0.0004	-0.08
Illness	-0.1528	-1.38	0.0035	0.26	0.0014	0.43
Flood	-0.2879	-1.58	0.0165	2.01**	-0.0027	-1.18
Drought	0.0307	0.26	-0.0124	-1.39	-0.0008	-0.29
Migration	0.2773	1.24			0.0002	0.03
Change variables						
Change sex of household head	-0.0488	-0.35	0.0162	0.57	0.1057	2.27**
Change of household head	-0.0254	-0.17	-0.0062	-0.39	-0.0060	-1.25
Change in number of children	-0.0174	-0.29	0.0196	2.35**	0.0015	1.00
Change in number of elderly	-0.0051	-0.04	-0.0062	-0.41	0.0023	0.87
Village dummy						
SP2	-0.0639	-0.21	0.0115	0.21		
SP3	0.5434	3.36***	-0.0039	-0.16		
KK2	-0.1124	-0.46	0.0560	0.73		
KK3	-0.0952	-0.38	-0.0133	-0.79		

Note: *** Significant at 1% level ** Significant at 5% level * Significant at 10% level

5.3.3 Results of the continuous model of household income change

In order to further analyse the factors that affect the changes in household welfare, this continuous model adopted change in log per capita real income between 1988 and 2009 as a dependent variable to regress, with many explanatory variables considered to be important, as shown in the discrete model above. As can be seen from Table 5.3, the results of the continuous model show that the initial level of log per capita income has a strongly negative coefficient. This can be explained by the fact that, all things being equal, the growth of household income is higher for households that were poorer to begin with. In other words, the lower the income level in 1988, the higher the income growth over the period. This finding is also consistent with those of previous studies of poverty dynamics (Lawson et al., 2006, Lohano, 2011).

It is also apparent that key household fundamental characteristics and assets have a very strong influence on income growth. The growth rate of income was significantly lower for households that had more elderly members in 1988. This is due to the fact that household members over 60 years of age were not likely to be active in the labour market or agricultural activities, which means that they have contributed less to the household income as they have grown older over the period. In addition, the growth rate of incomes of households with working members who only had primary or less than primary education was smaller. Agricultural variables and land-related factors, such as cultivated areas and irrigated areas, suggest the important effect of farming on changes in household income. The growth rates of income were significantly higher for households with more cultivated land and more irrigated areas; nevertheless, farm size is negatively associated with income growth. This may reflect the fact that there has been limited land endowment in Thailand and the expansion of land is no longer likely to provide more benefits to farmers. As mentioned in Sections 4.3.3 and 4.7.3 of Chapter 4, the average farm size declined across all the surveyed households, especially those in unfavourable areas in the Northeast region. However, land utilisation, as measured by the average cultivated areas, increased over time. This suggests that, rather than purchasing more land, farmers tend to utilise more of the land they already have by cultivating two or three crops per year during both the dry and wet seasons.

Growth rates are also significantly higher in households with increased numbers of non-farm workers, particularly those in the Northeast region. However, when classified by region, the result shows that the growth rate of income in the Central plain is higher for households with an increasing number of members working in the farming sector. This difference reflects the fact that the agricultural sector remains the predominant source of livelihood for households in the Central plain, while households in the Northeast are more engaged in non-agricultural activities. This is in line with the change in income structure of rural households over the past two decades, as described in Section 4.4 of Chapter 4. The reliance of rural households in the Northeast had shifted away from subsistence rice farming to non-agricultural waged labourers, especially in the manufacturing and construction sectors, business and remittances. This is due to limited opportunities for increasing farm income through rice intensification in the Northeast region, especially in an unfavourable environment as a result of uncertain rainfall, lack of irrigation facilities, and lack of access to production factors (Ahmad and Isvilanonda, 2003). Thus, working-age household members tend to diversify their economic activities by engaging in lucrative non-farm work. On the contrary, due to a more favourable agricultural environment, households in the Central region still mainly rely on agricultural income. There was also some extent of agricultural diversification or a shift from rice crop intensification toward non-rice crops and livestock farming.

In terms of the shock variables, the findings suggest that the illness of household members has a strong negative influence on the income growth of the household. There are also strong regional effects on the growth rates of income, with growth rates being lower in all villages, but most strongly in the Northeast region. This is consistent with the evidence of changing poverty incidence over the period as shown in Section 4.5 of Chapter 4. Poverty incidence rates are relatively higher in the Northeast compared to the Central region.

Table 5.3: Result of the continuous model of change in log per capita income

	All		Central		Northeast	
	Adj R2=0.4404		Adj R2= 0.2119		Adj R2= 0.5627	
Variables	Coef.	T ratio	Coef.	T ratio	Coef.	T ratio
Constant	5.4122	9.8***	5.5526	5.51***	5.6963	7.88***
Initial income	-1.1088	-9.23***	-1.1133	-5.01***	-1.2639	-7.64***
Demographics						
Age of head	-0.0011	-0.45	-0.0044	-0.66	0.0001	0.03
Female head	-0.0908	-1.16	-0.0841	-0.57	-0.0911	-0.89
Dependency ratio	0.0003	0.74	-0.0004	-0.25	0.0003	0.82
Household size	0.0158	0.49	-0.0087	-0.12	0.0058	0.13
Working members	0.0157	0.44	-0.0255	-0.26	0.0503	1.07
Elderly	-0.1183	-1.73*	0.0019	0.01	-0.0964	-1.24
Education						
Education of household head	-0.0132	-0.72	-0.0176	-0.54	0.0096	0.35
Education of household members	0.0245	0.88	0.0377	0.86	0.0203	0.43
Not complete primary	-0.0913	-1.9*	-0.0376	-0.38	-0.0628	-0.98
Primary	-0.0714	-2.63***	-0.0582	-1.22	-0.0858	-1.98**
Lower secondary	0.0085	0.14	0.2450	1.52	-0.0816	-0.96
Upper secondary	-0.0609	-0.67	-0.0775	-0.52	-0.1078	-0.67
Land						
Farm size	-0.3698	-1.97**	0.0376	0.1	0.0114	0.04
Cultivated land	0.4343	2.14**	0.1623	0.42	0.0799	0.29
Irrigated area	0.2720	1.84*	0.3445	1.4	0.0473	0.21
Rice yield	0.0068	0.23	0.0035	0.08	-0.0297	-0.48
Physical asset						
Agricultural asset	0.0119	0.69	0.0024	0.07	0.0095	0.45
Non-agricultural asset	0.0054	0.47	-0.0019	-0.08	0.0076	0.52
Occupation						
Farmer	-0.0326	-1.27	0.0796	1.89**	-0.0504	-1.67*
Non-farm workers	0.0586	2.65***	0.0203	0.42	0.0779	2.83***
Unemployed	-0.1199	-1.71*	-0.1393	-0.99	-0.0728	-0.83
Remittances	0.0000	-0.74	0.0000	-0.49	0.0000	0.08
Shock dummy						
Death of household head	-0.0411	-0.6	0.0178	0.13	-0.0342	-0.33
Death of household members	0.0471	0.63	0.1291	1	0.0372	0.37
Illness	-0.1531	-2.76***	-0.0553	-0.54	-0.1755	-2.26**
Flood	0.0300	0.32	0.0814	0.63	-0.1987	-0.94

	All		Central		Northeast	
Variables	Coef.	T ratio	Coef.	T ratio	Coef.	T ratio
Drought	-0.0186	-0.3	-0.0452	-0.39	-0.0521	-0.66
Migration	-0.0380	-0.38	-0.5908	-1.76*	-0.0166	-0.15
Change variables						
Change sex of household head	-0.0678	-1	-0.1209	-1.11	0.0823	0.82
Change of household head	0.0855	1.22	0.1059	0.8	0.0322	0.3
Change in number of children	-0.0108	-0.37	-0.0182	-0.35	-0.0137	-0.37
Change in number of elderly	-0.0942	-1.66*	-0.0801	-0.64	-0.0285	-0.41
Village dummy						
SP1	-0.1364	-0.87	(omitted)			
SP2	(omitted)		-0.3026	-1.33		
SP3	-0.2764	-1.95*				
KK1	-0.4878	-3.32***			-0.0622	-0.35
KK2	-0.2751	-2.24**			-0.0996	-0.95
KK3	-0.2381	-2.13**			(omitted)	

Note: *** Significant at 1% level ** Significant at 5% level * Significant at 10% level

5.3.4 Results of the quantile regression model

In this section, simultaneous quantile regressions are estimated to see if the effect of household characteristics and assets differs across the distribution of income. Table 5.4 shows the quantile regression results of three quintiles, the 25^{th}, 50^{th} and 75^{th} percentile of the initial per capita income in 1988.

The factors that drive the growth of income for the poorest third of the distribution are significantly related to demographics factors. Both the number of elderly members and household size have a large negative effect on income, particularly for those in the lowest quintile. Meanwhile, cultivated areas have a significantly positive effect on the income growth of this particular quintile, since the majority of this group are primarily engaged in the agricultural sector. In terms of physical assets, non-agricultural assets, namely motorcycles and bicycles, are negatively associated with income for the poorest quintile. However, agricultural assets tend to have a positive relationship with the better-off, including both the middle and the highest quintile groups, which suggests the potential of adopting modern agricultural technology to raise

the income of these higher quintile households. This is also in line with the data in Section 4.7.4 of Chapter 4, which suggests that the accumulation of agricultural assets plays a key role in the process of escape from poverty and is the highest in never poor households.

In terms of the effect of employment, households whose main economic activity is non-agricultural employment, including non-agricultural waged labourers, self-employed workers and salaried jobs are also associated with the higher income growth of both the poorest and middle quintile households. Non-agricultural work seems to have a greater positive impact on better-off households than poorer households, which suggests that additional working members in the wealthier households have a better opportunity to earn from higher-paid jobs, such as regular salaried jobs, while those in poorer households seem to obtain income from unskilled and low-paid non-farm waged labour.

The death of the household head and key income earners has a significantly negative impact on the poorest households. It is likely that poor rural households solely rely on the household head for their living, while the wife and other members stay at home mainly doing the domestic work and sometimes helping on the farm. Thus, they find it difficult to go back to work to earn an income if their husbands or key earners die.

Overall, the quantile regression results provide interesting evidence that different income distribution, the poorest and the richest households, in rural Thailand have different income generation functions. Many variables are demonstrated to be significant determinants of changes in income for the poorest, but not for the richest. The lowest quintile seems to be vulnerable and become more disadvantaged by the size of the household, number of elderly members, non-agricultural assets, and the death of income earners. The income of the poorest is significantly determined by being located in cultivated areas, the numbers of non-farm workers, while agricultural assets matter more to the income of richer households. The analysis results of changes for different quantiles of the distribution provide more insightful conclusions than the analysis of income at the mean in the continuous model. This suggests that the economic and social changes that took place in rural Thailand between 1988 and 2009 resulted in a variation

of key household variables along the income distribution, and in particular between the poorest and richest households.

Table 5.4: Results of the quantile regression model

	25th percentile		50th percentile		75th percentile	
	Psudo R2 = 0.3949		Psudo R2 = 0.4530		Psudo R2 = 0.5049	
	Coef.	Z	Coef.	Z	Coef.	Z
Constant	4.1191	23.36	4.2324	26.56	4.4451	16.18
Demographics						
Age of head	0.0038	1.78	0.0027	1.54	0.0020	0.54
Female head	-0.0673	-1.58	-0.0405	-1.14	-0.0655	-0.90
Dependency ratio	0.0000	0.01	-0.0002	-0.42	-0.0009	-1.76*
Household size	-0.0614	-3.47***	-0.0575	-2.52**	-0.0229	-0.71
Working members	0.0014	0.04	0.0039	0.14	-0.0224	-0.53
Elderly	-0.1004	-1.86*	-0.0563	-1.13	-0.0265	-0.32
Education						
Education of household head	-0.0045	-0.38	0.0033	0.35	-0.0063	-0.36
Education of household members	0.0026	0.12	0.0008	0.03	-0.0016	-0.06
Not complete primary	-0.0482	-0.90	-0.0593	-1.27	-0.0950	-1.41
Primary	-0.0194	-0.76	-0.0291	-1.55	-0.0506	-1.65*
Lower secondary	0.0007	0.01	-0.0115	-0.26	-0.0560	-0.86
Upper secondary	-0.0941	-1.00	-0.0401	0.59	0.0315	0.07
Land						
Farm size	-0.0544	-0.32	-0.0095	-0.05	0.0916	0.36
Cultivated land	0.5811	3.59***	0.4883	3.05***	0.2644	1.22
Irrigated area	0.1263	1.08	0.1571	1.34	0.1928	1.33
Rice yield	0.0632	3.11***	0.0416	2.96***	0.0526	2.25**
Physical asset						
Agricultural asset	-0.0051	-0.43	0.0197	2.78***	0.0326	2.04**
Non-agricultural asset	-0.0061	-1.13***	-0.0100	-1.56	-0.0077	-0.84
Occupation						
Farmer	0.0180	1.44	0.0274	1.39	0.0176	0.63
Non-farm workers	0.0042	2.23**	0.0147	2.63**	0.0198	0.69
Unemployed	0.0793	1.94	0.0719	2.08	0.0434	0.76

	25th percentile		50th percentile		75th percentile	
	Coef.	Z	Coef.	Z	Coef.	Z
Shock dummy						
Death of household head	-0.0361	-2.74***	0.0596	1.51	0.0399	0.85
Death of household members	0.0254	0.54	-0.0063	-0.20	-0.0106	-0.27
Illness	0.0241	0.67	-0.0022	-0.06	0.0145	0.26
Flood	-0.0094	-0.17	0.0002	0.00	0.0377	0.30
Drought	0.0180	0.55	-0.0042	-0.14	0.0027	0.07
Migration	-0.0132	-0.23	-0.0648	-0.88	-0.1159	-0.94
Change variables						
Change sex of household head	0.0259	0.53	0.0494	0.90	0.0379	0.51
Change of household head	-0.0066	-0.10	-0.0131	-0.25	-0.0268	-0.54
Change in number of children	0.0145	2.51**	0.0082	1.11	0.0366	1.24
Change in number of elderly	-0.0179	-0.43	0.0091	0.22	-0.0030	-0.05
Village dummy						
SP1	(omitted)		-0.6044	-0.66	-0.4151	-0.45
SP2	-0.1204	-1.06***	-0.0972	-0.65***	-0.0270	-0.15
SP3	-0.3808	-5.91	-0.3446	-5.57***	-0.2746	-3.18***
KK1	-0.2843	-4.22	-0.2585	-3.62*	-0.2584	-3.80***
KK2	-0.2559	-3.09***	-0.1811	-1.74	-0.1361	-0.91
KK3	-0.1685	-2.01**	-0.1127	-1.01	-0.0425	-0.36

Note: *** Significant at 1% level ** Significant at 5% level * Significant at 10% level

5.4 Conclusion

This chapter has provided a multivariate analysis of poverty dynamics in rural Thailand using longitudinal survey data over a twenty-year period, in 1988 and 2009. Different poverty dynamics models were estimated to analyse the key determinants of poverty dynamics. These included the discrete model, the continuous model, and the quantile regression model. A set of explanatory variables was identified, including household characteristics and assets, in order to estimate their impact on the probability of households experiencing each poverty dynamic category, as well as on changes in per capita income. The results were mostly consistent across different model specifications.

The multinomial logit and sequential probit regression models both show that households with a high dependency rate, with no education or less than a primary level,

and those who experience the death of the household head, are most likely to be chronically poor. Households with highly cultivated lands and irrigated areas, as well as households whose members have completed a higher education level and engage in non-farm employment, have an increasing possibility of moving out of poverty. However, it is likely that households with female heads and households with a high dependency rate tend to be vulnerable and have high possibility to move into poverty. According to the continuous model of change in the logarithm of household per capita income, the regression results suggest that the initial level of income has a strong negative impact on the growth of household income, in that the income growth tends to be higher for households that were poorer in the initial period. In addition, initial household conditions also have a very strong influence on income growth. Finally, the quantile regression model was employed to examine whether or not the poorest and richest households have different income determinants. Many variables were shown to be significant determinants of income for the poorest, but not for the richest. Rice yields and agricultural assets matter more to the income improvement of the richest households, while the welfare of the poorest is significantly determined by cultivated areas and the number of non-farm workers.

Taken together, the results demonstrate the important facets of poverty dynamics in rural Thailand between 1988 and 2009. Firstly, the key initial household and village characteristics such as a high dependency rate, less than primary education, death of household head, and flood incidents are likely to have a significant impact, which traps households in chronic poverty. These general household characteristics exhibit the nature of chronic poverty in rural Thailand. Secondly, as in many developing countries, the key structural factors associated with moving households out of poverty include post-primary education, cultivated and irrigated areas. Non-farm employment also plays an important role in the transition from poverty, particularly in the Northeast region

where there are relatively limited opportunities to increase farm income, especially in unfavourable environments where there is uncertain rainfall, lack of irrigation facilities, and lack of access to production factors. Lastly, covariate and idiosyncratic shocks also have a significant effect on the category of poverty dynamics. Idiosyncratic shocks at household level, such as the death of a household head and illness, are likely to increase the probability of households remaining chronic poor or the poorest, while covariate shocks at village level. such as drought, are important factors that make households more vulnerable and thus, susceptible to moving into poverty.

CHAPTER 6

Experience of poverty dynamics: Perceptions of local people

6.1 Introduction

In order to gain insight into the nature of poverty dynamics, it is not only important to understand 'who' remains in each pattern, but it is also necessary to understand the elaborate process that generates poverty dynamics or question 'why' these changes occur. Chambers (1983) points out that the conventional questionnaire surveys normally conducted by what he calls 'outsiders' have significant limitations. Thus, he emphasises combining the survey with other methods that make rural people partners in the research, which can illustrate the reality truly experienced by poor people. Baulch and Hoddinott (2000) also emphasise that *'it is important to learn more about processes that drive mobility at the community and household level'*. The strength of the qualitative approach is that it provides a better insight into causal processes and contextual factors by giving primacy to people's own experience (ibid).

This chapter aims to provide the empirical results of the poverty dynamics and changing livelihoods of rural households in Thailand by means of the privileged perceptions of local people in order to fill the gap in the literature on qualitative longitudinal studies of poverty dynamics. The application of qualitative approaches to the analysis of poverty dynamic has increased in recent years, although they have been relatively few in number compared to quantitative studies (Krishna et al., 2006). Earlier longitudinal qualitative research methods for poverty dynamics include, for example, community-based methods used in repeated village studies (see Kabeer, 2004), life history interviews (see Bird and Shinyekwa, 2003, Lawson et al., 2007, Davis and Baulch, 2009) and the use of a participatory approach to poverty dynamic appraisals (see Shaffer, 2002, Krishna et al., 2006, Kristjanson et al., 2009, DeWeerdt, 2010).

Two qualitative methods are adopted in this study, namely, self-assessment of poverty dynamics and life history interviews. The findings from the self-assessment are expected to be triangulated with the quantitative findings in Chapter 4 to ascertain whether they confirm or refute each other, and the life history interviews will help to provide more detailed information and additional insights about households' experiences, especially the processes underpinning changes in poverty that are directly experienced by local people and are unable to be observed using a quantitative survey.

This empirical chapter contains six sections and they are organised as follows. Firstly, the qualitative methodological research design is reviewed in order to gain an initial understanding of how this study was undertaken. Secondly, the concepts of poverty and classification of poverty status are defined and analysed, primarily based on people's own perception. Thirdly, the pattern of poverty dynamics is also examined from people's perception, and fourthly, the key factors explaining the experience of poverty dynamics, including chronic poverty, moving into and out of poverty and never poor are discussed. Finally, case studies from the life history interviews are presented, together with life trajectory diagrams before concluding the chapter in the last section.

6.2 Qualitative methodological research design

This section will briefly describe the qualitative methods used in the study, since detailed information of general qualitative methods has already been provided in Section 3.5. of Chapter 3.

Following the qualitative methodological approach, I obtained a package of tools for the collection of qualitative data in the sample villages. The qualitative research used for the study comprised two main methods, including self-rated poverty dynamics and life history interviews. The qualitative methods were sequentially integrated with the quantitative in that the same sampling frame of the quantitative survey data was adopted for the life history interviews. Twenty four of the surveyed households were purposely selected for in-depth life history interviews at greater length, which were designed to obtain a better understanding of the extent of poverty dynamics and the key factors that construct poverty dynamics, including households' resources and economic and social processes.

The qualitative methods involved a self-rated poverty assessment of the same 240 household samples as adopted for the survey. Open-ended questions were added at the end of the questionnaire in order to obtain people's direct self-perception of how they rated their poverty status and how they perceived changes in poverty, as well as how they identified the factors associated with those changes.

For the next stage, the research applied in-depth life history interviews at the household level. The adoption of life histories provided an opportunity to obtain information about households that happened during the study period and critical factors identified by local villagers as being important, but which were not included in the questionnaire (Lawson, Hulme and Muwonge, 2007). The in-depth life history interviews were undertaken in the 24 selected households across both provinces. 12 sample households in each province were purposively selected for intensive life history interviews. Each household represents each type of four dynamic categories classified by the quantitative transition matrices from the quantitative survey analysis. The patterns of life trajectories are basically based on the people's perception of their own life conditions that change over time. As representative of the household, the household heads were asked to describe their life histories, focusing on important life events. The aim was to explore further details, based on their perspective, about why their households experienced each trajectory pattern.

6.3 Concept of poverty and household poverty classification

6.3.1 Defining poverty from local people's perspective

In order to acquire a complete picture of poverty, it is not only important to understand poverty from the perspective of researchers or policymakers as an 'outsider'; it is also important to consider the perception of local people as 'insiders' who have directly experienced poverty in their lives (Chambers, 1983, Chambers, 1995, Chambers, 2006). The book 'Voice of the poor' is a set of studies undertaken by the World Bank, and the first page contains a quote from an interview with a poor man in Ghana, who said *'Poverty is like heat; you cannot see it, you can only feel it: so to know poverty you have to go through it.'* (Narayan et al., 2000). By taking people's

perceptions into account, a better understanding can be gained of the dimensions of poverty that are truly vital to local people, including the nature, causes, priorities, as well as the processes of pathways into and out of poverty. In addition to improving the understanding of poverty, recognising different views about poverty, especially from local people and particularly poor people themselves, can also contribute to the development of more effective policies for poverty reduction (Laderchi et al., 2003).

Therefore, the aim of this chapter is firstly to understand the concept of poverty by listening to and learning from local people's own voices. The first stage of the exercise was undertaken at household level by asking all 240 sampled households open-ended questions incorporated in the questionnaire survey. As representatives of households, household heads[56] were asked to explain their own understanding of poverty; thus, the first question in the open-ended interviews was '*How do you define poverty?'* It is worth noting that there is small difference in the local terminology of the word 'poverty' among the two different regions in the study. The local word used for poverty in the Central plain is *'Yak jon'* or *'Jon'* (translated as poor or deprived), while it is *'Took'* for local people in the Northeast region.

It was apparent from local people's perspective that poverty is multidimensional and goes beyond income or material deprivation. This multidimensional view of poverty is also consistent with the findings of other studies of poverty in Thailand based on people's perception using a qualitative and participatory approach (Paitoonpong, 1999, Chiangkul, 2002). According to the information gathered from the interviewees in this study, the definition of poverty perceived by local people in Thailand can be summarised and categorised into 6 main aspects of poverty as shown below.

[56] Household heads were interviewed as representatives of the household. All the household heads were those who had resided in the same place during both survey periods while about 54 percent of them were still the same persons. 78 percent of the household heads brought their spouse to participate in the interview with them.

(1) Asset poverty

Poverty means the deprivation of material assets, including money and other important assets that are considered to be basic necessities for households' living. These basic elements include certain assets, specifically a house, land and farm machinery. Poverty also means having large debts and no savings because of insufficient income to support and cover household expenditure.

> *'For me, poverty means living in hardship...not having enough money, no source of income to support and cover living expenses within the family.'*
>
> (A 56 year-old man, Khon Kaen).
>
> *'Poverty means when you lack everything; no house, no land, no money to buy food to eat.'*
>
> (A 48 year-old woman, Khon Kaen)
>
> *'It is when I cannot afford to spend on my household and thus have to borrow money from loan sharks...that is poverty.'*
>
> (A 51 year-old man, Suphanburi)

(2) Job insecurity poverty

Poverty means an unsecure occupation/employment status. This includes daily waged labourers who depend on their source of earning day by day, so-called in Thai *'Ha Chow Kin Kum',* which means earning in the morning and using that money to eat in the evening.

> *'My wife and I are now living and earning our income day by day as farm day labourers. I have no idea what our future will be, not even what it will be like tomorrow if they still want to hire me. If not, I will seek further for other job. What else can I do?'*
>
> (A 78 year-old man, Khon Kaen)
>
> *'For me, poverty is when you feel insecure about what you earn for your living. Working as a day labourer does not provide any security that you will be hired in the future. It all depends on the employer's decision. They do not need to explain why they don't want to hire you any more.'*
>
> (A 43-year old man, Suphanburi)

(3) Physical poverty

Poverty means living with bad health, having physical disability and being weak from illness/injury that obstruct one from being able to work efficiently.

> *'I say that I am a poor because poverty is when you are in bad health that prevents you from working. Being permanently handicapped is like living in prison.'*
>
> (A 64 year-old woman, Suphanburi)
>
> *'My wife and I are now getting older and older. We are like old wood...and that really reduces our ability to work and earn an income. I call it poverty in energy and physical health.'*
>
> (A 79 year-old man, Khon Kaen)

(4) Social relations poverty

Poverty means having a low social status, being powerless, lacking freedom of choice, poor relationships with others, both in the family and the community. This type of poverty seems to obstruct people from having opportunities to access basic livelihood assets and public services, such as water supply, education and healthcare, as well as access to information.

> *'Being poor is when you have to ask for food from neighbours, but you are mistreated by them. They sometimes do not even want to talk to me or sometimes shout to me like I am a dog.'*
>
> (A 67 year-old man, Khon Kaen)
>
> *'Poverty means facing difficulties and living in hardship without any help. It is like that you are neglected and live alone in this world'*
>
> (A 64 year-old man, Khon Kaen)

(5) Mental poverty

Mental poverty includes all such expressions and feelings of being miserable, depressed, worried, distressed, struggling and being left alone and having nobody to take care of you. This is called *'Jon jai'* and *'Lam bak jai'* in the Thai language, translated as hopelessness, worrisome or desperation.

> *'Poverty means when you feel hopeless and start feeling stressed and worried due to several problems that sometimes come to you all at the same time and you don't know how to solve them. I would say that it is poverty of mind.'*
>
> (A 62 year-old woman, Khon Kaen)

> *'I think poverty is being stressed and struggling to make ends meets. This is the case when I see my disabled brother who is now living with me and I do not know how to help him.'*
>
> (A 58 year-old woman, Khon Kaen)

(6) Culture of aspiration or aspirational poverty

It is believed that people generally aspire for something to satisfy their needs. A culture of aspiration is one in which the goals to achieve those aspirations exceed resources (Camfield et al., Forthcoming). Some people said that poverty is when people have infinite needs and do not feel satisfied or content with what they have. In the Thai language, this is said to be *'Mai por' (translated as 'not enough')*. It is rather subjective and cannot be measured and compared. This also includes those who already have money and own certain assets, such as a house, car, land, and so on, but are infinitely greedy for more and more without being sufficient. This can partly be seen as relative poverty, as people can feel poor in relation to what they know other people have; therefore, they aspire to have the same things as others. This aspect of poverty is the opposite to material or income poverty, which generally means the lack of basic necessities for living, called in Thai '*Mai mee' (translated as 'lack of" or 'not have')*. Simply said, those who are income non-poor can become aspirationally poor if they have infinite aspirations. However, some mechanisms cause people to reduce their aspirations or limit their goals to what they believe they cannot achieve, and this is called a culture of poverty (ibid).

> *'For me, poverty means not enough for oneself. As long as you want or aspire for things infinitely, you will not be able to fulfil yourself, and that is what I call poverty.'*
>
> (A 54 year-old man, Khon Kaen)

> *'There are two meanings of poverty. One is when you do not have enough to serve your basic needs and the other is when you do not feel grateful enough for what you have and still want more.'*
>
> (A 79 year-old man, Khon Kaen)

6.3.2 Poverty level classification

According to the interviews, local people generally classify their living status into three categories; poor, average and rich. These three categories were found to be common among local people in both regions when they were asked to classify their life conditions. There were no significant differences between the two regions, and each category was also described and distinguished by people to identify their key characteristics. The level of life conditions was indicated using a scale of one to three; poor, medium, and rich. To triangulate the assessment, these levels were later confirmed by a focus group discussion with about 10 local people per village, including the village head, the elders and some volunteer villagers.

As described in Table 6.1, the level 1 or poor group (*known as 'Jon' in Thai*) was identified as those who were generally landless or owned small pieces of land only for dwelling purposes, were unemployed or engaged in unsecure jobs in which they could only earn their living on a day by day basis. Being in poverty was also considered as having a low income that could not cover the household expenditure, even of basic necessities for living, and thus, caused a high amount of debt. These people could not afford two or three meals a day, and sometimes needed to ask for food from others. It is worth noting that there are some distinctions in the characteristics of the poor in the two regions. In the Northeast region where most households grow rice for self-consumption, people identified poor households as those that could not produce sufficient rice for their family to consume, but rather needed to use the money to buy rice to eat. However, in the Central region, people did not mention this characteristic of poor households, since almost all households grew rice for commercial reasons and bought rice for their own consumption. Therefore, they identified poor households as those who could not afford to purchase rice for consuming within household. In addition, those elderly people that have been left alone by their children and having bad health were also considered as being poor in people's views.

Households at level 2 or the average status group (*commonly known in Thai as 'Por yuu por kin' or 'Por mee por kin' which means 'have enough to live and eat and be able to make a living'*) were considered as having more secure overall living conditions in which they could afford their living, including sufficient food for all household members. They were also employed in secure jobs with a regular income and had some savings. Moreover, the characteristics of these households also included owning some land and being able to send their children to school at the lower secondary level. Households at this level in the Northeast region were considered to be those that could produce sufficient rice for self-consumption, as well as saving some rice stocks in the barn.

Households at level 3 or the rich group (known as 'Ruay' in Thai) were those who lived well and comfortably, earned large amounts of money and had lots of savings, owned a great deal of land and many assets, such as big houses and many vehicles. They were also able to support their children through higher education. Rich households were also seen as those that have many sources of income and have lots of inheritance, especially land that they could make use of or sell to make lots of money. Most of the interviewees said *'rich people can buy everything they want'*.

There were clear differences between the characteristics of households perceived as being poor in level 1 and those that were able to make a living on average in level 2. Everyone agreed that household living conditions at level 2 were more secure and less vulnerable than at level 1 and this was seen as the level at which households were not in poverty. Therefore, people perceived that the poverty cut-off was at level 2.

Table 6.1: Poverty status classification perceived by local people

Level	English	Thai	Local word	General characteristics
1	Poor	Jon	Took/ Ued	• Landless or own small size of land, normally less than 2 rai (equal to 0.3 hectares)* (and most land owned is for dwelling only, not for cultivation) • Being unemployed or only earn a living day by day, working as daily waged labourers with no permanent job. • Have to borrow money from others led to high debts that were difficult to pay back. • Have no money to buy rice and food (This is the case for Central region where most households grow rice that is sold for commercial consumption in order to earn money to buy rice for themselves). • Insufficient rice to consume within the family. (This is applicable in the Northeast region where most households grow rice for self-consumption and do not need to buy it). • No inheritance from grandparents or parents. • Bad housing conditions, such as having poor ceiling and three side walls. • Being alone, abandoned by children.
2	Average (Able to make a living)	Por yuu por kin	Por mee por kin/ Por yuu dai	• Own some land with a size of 3-30 rai (0.5-4.8 hectares) • Could afford enough food for living. • Have secure job and earn regular income with salaried jobs. • Have sufficient money and assets for living and some money left to save. • Have some debts but are able to pay them by the due date. • Have sufficient rice in the barn for self-consumption within the family, normally for at least six months to a year ahead. • Able to send their children to secondary school.
3	Rich/ Well-off	Ruay	Bor-ued-bor-yark/ Kai-na	• Own plenty of land, with large land size of more than 30 rai (more than 4.8 hectares) • Have lots of money and assets (e.g. big house and a number of cars) • Have many sources of income. • Have lots of savings and able to provide loans. • Able to purchase anything they want. • Have inherited lots of assets from their parents.

Note: * 1.6 Rai=1 Hectare

Source: From the interviews

6.4 Pattern of poverty dynamics from the perception of local people

Having determined the poverty status of both of the surveyed periods from the interviews, each household was assigned to one of four separate categories to obtain the results of the self-rated poverty dynamics of all 240 households. Similar to the poverty dynamics classification in the quantitative analysis in Chapter 4, households were classified into four poverty dynamic categories on the basis of their perception of their poverty status at the starting period of the study in 1988 and their position at the end of the study in 2009. The poverty dynamics categories included (1) chronic poor, (2) moving out of poverty, (3) moving into poverty, and (4) never poor.

The poverty dynamic transition matrix in Table 6.2 shows that about 8 percent of households remained poor in both periods, whereas 40 percent experienced poverty in one of the two periods. About 35 percent of the households interviewed perceived that they had been able to move out of poverty, while another 6 percent moved into poverty. A larger proportion of households perceived that they had moved out of poverty compared to those who thought they had moved into poverty, which was in line with the income-based poverty dynamics shown in Table 4.16 in section 4.6 of Chapter 4. It is clear from Table 4.16 that about 10 percent of households remained poor in both periods, whereas 50 percent experienced poverty in one of the two periods or were sometimes poor. 42 percent of households were able to move out of poverty, while 8 percent moved into it. This is also consistent with the aggregate data at the national level, which indicates a tremendous improvement in the poverty situation in Thailand over the same period. The poverty incidence rate in Thailand declined steadily from 42.2 in 1988 to 8.1 percent in 2009 (NESDB, 2011).

However, about half of the households perceived themselves as being never poor. Most households that reported their household status as being never poor over the past twenty years provided supportive reasons that they had lived well in the past although they only earned a small amount of money. This is because they grew rice for their own consumption and obtained several kinds of food from natural sources without having to use money.

'In the past, there were fewer sources of income and limited types of employment; however, we did not consider ourselves as being poor because despite a low income, we could grow rice for our own consumption. There was enough rice for us to eat all year around without having to spend money to buy it. We could consume as much rice as we wanted and that was more than enough for everyone in the family. We have rice barns to store unused rice that we can sell when the new crops are being harvested. In the past, we could see how rich each household was by the number of rice barns they owned.

It is also not difficult to find food. We did not need to buy food or cooking materials because there were plenty of vegetables we could just grab from our own farm and backyard, and also a lot of fish, frogs, and shellfish to be caught in the pond. This is why we feel we lived well without money. However, nowadays, we need to have money to buy everything. The monetary value of 100 baht today equals 10 baht in the past. Yes, we can earn more but we also use more.'

(Interviews from the elderly in Khon Kaen)

When considering each region, it was found that there were also important regional location differences in the pattern of poverty dynamics from people's perception, similar to the survey results. The proportion of households remaining in chronic poverty in the Northeast region was greater than in the Central plain. However, a greater proportion of households in the Northeast moved into and out of poverty compared to those in the Central plain.

Table 6.2 Poverty dynamics from local people's perception

(%)	Chronic poor	Moving out of poverty	Moving into poverty	Never poor
All areas	7.9 (9.6)	35.4 (42.1)	6.3 (7.9)	50.4 (40.4)
Central region	3.7 (5.6)	21.5 (21.2)	4.7 (7.5)	70.1 (61.7)
Northeast region	11.3 (12.8)	46.6 (55.6)	7.5 (8.3)	34.6 (23.3)

Note: Numbers in parentheses represent income poverty measures obtained from Table 4.16 in section 4.6 of Chapter 4

6.5 Key factors associated with the experience of poverty dynamics

So, what enabled some households to escape poverty, while some remained in chronic poverty? What triggered some households to enter into poverty, while some did not? These are the two key research questions that studies on poverty dynamics aim to resolve. These two dynamics have different underlying factors and do not just represent opposite sides to each other. The reasons for moving out of poverty tended to be different from those associated with moving into poverty (Baulch and McCulloch, 2002, Sen, 2003, Krishna, 2010a). In-depth interviews with 240 households were conducted to obtain an explanation of the factors associated with the experience of poverty dynamics, including both moving into and moving out of poverty based on local people's perspectives.

6.5.1 Explanation for remaining in chronic poverty

The interview results suggest that the main factors of why households were unable to move out of poverty and remained in chronic poverty can be classified into three main groups: (i) Assets were identified as being the most important contributory factor to chronic poverty. This is in line with previous studies of chronic poverty which found that the chronically-poor households generally own few assets (Dowling and Chin-Fang, 2009). The chronically poor who are landless and lack financial capital mainly depend on low-paying wage labour in non-agricultural sectors for their livelihood. Their only sources of earnings are mainly based on casual wage income of about 150 baht per day (equivalent to 5 US dollars) which is insecure and often insufficient for their household daily living expense. This also results in the landless chronically poor being deep in debt, since due to lack of land and the inability to save, poor households tend to have no access to credit. (ii) Risk factors include ill health problems and the death of the household head, which constituted the second most important factor for households to remain in poverty. (iii) Demographic factors were perceived to be the third most important reason for remaining in poverty. A higher dependency rate was significantly due to an increase in the number of household dependents, including children and elderly parents, as well as a decline in the number of

income earners as a result of families breaking up and the out-migration of working-age members.

The main reasons for remaining in chronic poverty perceived by households are classified below according to the importance of each factor.

(1) Land assets

Since land is one of the most important assets for farm households, land-related factors such as landlessness and unproductive small patches of land were mentioned by households as the key reasons for remaining in poverty. This accounted for almost one third of the total households that remained in chronic poverty. The majority of the chronically poor who were landless or only owned a small piece of land mainly relied on income from non-agricultural sources by participating as daily wage labourers in non-lucrative, physically-demanding and low-skilled activities, such as work on construction sites and in factories. Meanwhile, the landless poor households also tended to rent others' farms, earning small amounts of fixed rent income or receiving paddy every year from the landlord as compensation for their labour[57].

> *'My family is landless. My father has no land for me to inherit. My husband and I have to work on other people's farms. We have rented a farm for over thirty years of marriage. Now we are getting older and cannot work on the farm any longer, so my family depends on daily waged labour. My daughter and I are hired to grow and harvest water chestnut for other people's farms, earning only 2-3 pounds a day.'*
>
> (A 70 year-old woman in Suphanburi)

(2) Ill health

About 20 percent of the households that had remained in poverty specified ill health as the second most important factor. During the interviews, the respondents explained that the household head and/or household earners had experienced long-term illnesses on account of major accidents or chronic diseases which had adversely affected their ability to work efficiently. Not only did they mention their inability to work, but

[57] According to tenancy landholding, the leasehold tenancy has three different rental patterns; a fixed rent in cash, a fixed rent in kind (eg. paddy) and sharecropping.

also said that most of their income was spent on medical bills and transportation. Most of the cases experiencing health problems were elderly members who had no-one to take care of them and who had been left alone by their children or spouses. In such circumstances, these elderly and left-alone people generally viewed their household condition as living in poverty. It is worth noting that this can be explained by a broader concept of poverty. As mentioned in Section 6.3.1, people do not always perceive poverty as solely meaning a lack of income, but also include so-called cognitive or mental poverty, which can be defined as a complex combination of many characteristics, including feelings of stress, depression, powerlessness and unworthiness that could be the result of growing older, experiencing chronic ill health, and living alone without children or spouse to take care of them.

> *'My husband died thirty years ago due to a high fever. Our first daughter was five years old at the time. I had to live and raise the children alone. We had four children, but only two are alive now. Our family has experienced hardship all along. I have been blind since I was born, so all I could do was grow some vegetables to be sold in the village although I could earn only small amounts of money.'*
>
> (A 71 year-old woman in Khon Kaen)

(3) Dependency rate

Demographic factors were cited as being another important reason for households being unable to move out of poverty and remaining in chronic poverty. Specifically, high dependency households accounted for about 26 percent of all cases. Such a high rate of dependency was the result of a high number of dependents, including both children and elderly parents while the number of income earners in each household was relatively low. Over time, there had been an increasing trend of migration of young working-age members to big cities and the capital, Bangkok, to look for work, while some people broke away from the family to build families of their own, leaving elderly people and children alone in their home town. Generally, grandchildren were looked after by their grandparents when their parents migrated for work. Large numbers of children incurred high costs of education and living expenses.

'I have seven children. Two died when they were born, while our second daughter died ten years ago. We have four children left. They are all working in Bangkok and have left my three grandchildren here with me. The only sources of income now are the money they send back, although it is not enough for each month. I might have to ask our eldest grandson who has now turned 15 years old to drop out from school and work on the farm or find other jobs. I own a rice farm of five rais, but nobody helps me to work on it anymore. My wife and I are also too old to work.'

(An 81 year-old man in Khon Kaen)

Table 6.3 Factors of remaining in chronic poverty as perceived by respondents

Factors	Reasons for remaining in chronic poverty	Number of households			%	Rank
		Central	Northeast	Total		
Demographic factors		**0**	**5**	**5**	**26.3**	III
	Decline in number of working aged members as a result of migration in order to set up their new family and find jobs while the elderly and children are left alone in their hometown.	0	3	3	15.8	3
	Having a large number of children whose education consequently brought about a high level of expenditure.	0	2	2	10.5	4
Asset factors		**2**	**6**	**8**	**42.1**	I
Land	Being landless due to selling land to others or distributing as inheritance for children	1	5	6	31.6	1

Factors	Reasons for remaining in chronic poverty	Number of households			%	Rank
		Central	Northeast	Total		
Financial	Experiencing high debts and lack of access to credit	1	1	2	15.8	3
Risk factors		**3**	**3**	**6**	**31.6**	II
	Experiencing ill health due to disease or accidents. Also, having no-one to take care of them and, in most cases, being left alone	2	3	5	26.3	2
	Death of the household head	1	-	1	10.5	4
Total		**5**	**14**	**19**	**100**	

Source: From the interviews

6.5.2 Explanation for moving out of poverty

A total of 85 households reported that they had been able to move out of poverty during the period. There appeared to three key drivers of escaping from poverty, which can be categorised as follows: (i) Demographic factors including an increase in the number of working-age members and a reduced numbers of dependents, (ii) Asset factors including, for example, the accumulation of land, machinery, employment diversification, greater access to credit and (iii) External factors, including an increase in crop prices and a positive economic condition. As outlined in Table 6.5, the structural factors that specified livelihood assets owned by households were perceived as being the most important reason for moving out of poverty by about 53 percent of households. Meanwhile, demographic factors and external factors accounted for 42 and 5 percent respectively.

Classified by each group, the main reasons for moving out of poverty as perceived by households are disaggregated below in order of importance

(1) Household dependency rate

The lifecycle or demographic factors were reported as being the most important factors for the escape from poverty of 42 percent or 36 of 85 households. The chance to move out of poverty was facilitated by a change in the household demography, including an increase in the number of working members and a reduction in the number of dependents, specifically children. Sen (2003) also pointed out in his study about changing household fortunes in rural Bangladesh that the life cycle factor played an important role in moving households out of poverty. It appeared that the increased number of workers with declining dependency ratio had positive influence on rural income growth and thus the poverty reduction process during the survey period.

Most households agreed that their families had been faced with difficulties over past twenty years, especially because of the high cost of raising their children, including school fees, as well as all other living expenses. Meanwhile, household earnings came from working-age members and mainly depended on farm income. Parents felt that they had insufficient time to work on the farm since they also needed to spend time raising their children. However, they felt that their households had become well-off today compared to the past twenty two years since their children had finished school, grown up, entered the work force and started to earn an income. Some received remittances from their children who had migrated and sent money back home to help to support the family. Meanwhile, the reduced number of children had somewhat decreased the household compared to the past, especially the expenditure on the children's education.

> *'In the past twenty years, we have faced a lot of difficulties in life due to the fact that we could only grow rice once a year. When the farm was flooded, we really had nothing left, not even rice to eat. Our children were still young. We needed quite a lot of money to care for them, including food, milk, schools and so on. However, nowadays our family has become better off. All our children have grown up and graduated at post-secondary vocational education and college level. They earn a salary every month which helps our family a lot; we have not fallen into hardship like before.'*
>
> (A 73 year-old man in Suphanburi)

(2) Diversification of income sources

An improvement in human assets, specifically employment status, was identified as being the second most important factor for moving out of poverty. About 25 percent of households that had moved out of poverty said that the diversification of their source of income from the farm sector to non-agricultural employment had positively affected their move out of poverty. The importance of non-farm income diversification to pathways out of poverty has also been emphasised in many research findings of other developing countries (Lanjouw, 1999, IFAD, 2003, DeJanvry et al., 2005, Lanjouw, 2007, Narayan et al., 2009). Being engaged in the non-agricultural sector, particularly in formal salaried jobs including for example, government officials, employees, casual waged labourers, especially in industrial factories and construction sites, as well as self-owned businesses such as grocery stores, barbers and sewing services, helped to enhance households' earnings and became alternative sources of income. Non-farm income had increasingly become the primary income source for rural households. Income diversification seems to have made households resilient to unanticipated events and shocks, as well enabling them not to rely for their living solely on agricultural activities, which are basically subject to volatile weather conditions and seasonality. Meanwhile, some households still earned their living from farming, but they tended to emphasise agricultural diversification to other non-rice crop production and livestock as the key factors for moving out of poverty. These findings indicate that not only was the diversification of employment to the non-farm sector significant for moving households out of poverty, but also the diversification of farm production out of rice intensification toward non-rice crops.

> *'Our family has improved a lot compared to twenty years ago. We solely depended on our household living from farming, which provided a low income. In the past, our family had no other sources of income. The only way was to wait for the rain; we could grow rice only once a year. Luckily, I had a good chance to work in the government sector as a municipal officer about six years ago where I received a regular salary. I would say that this job was the turning point for our family.'*
>
> (A 62 year-old man in Khon Kaen)

(3) Behaviour and values

Households that had been able to move out of poverty emphasised the significance of thrifty, economical and hard working behaviour, which they believed to be the key factors. They said that their parents had taught them to become thrifty by only spending on necessities and saving as much as possible. In addition, they believed that they should be satisfied with whatever little they had, or be self-sufficient and not too greedy or be tempted to over-spend. This is generally known in the Thai language as *'por piang'* or *'por yuu por kin'* (translated as 'sufficient' or 'have enough with what one has for living and eating'), following His Majesty King Bhumibol Adulyadej's philosophy of a sufficiency economy[58]. From these people's perspective, being poor does not mean lacking enough possessions, but rather having not enough in oneself. This concept follows one of the major dhamma lessons from the Buddha, which suggests that people need to be satisfied with what they have and should control their greed in order to live a contented life. Happiness is not found in being able to acquire everything one wants; rather, one should be pleased and content with what one has and control one's desires to avoid being too excessive or eager to own unnecessary things. These households also considered that working hard and tolerating whatever happens in life is the key factor of success to escape from poverty. Therefore, if people feel they have enough and are satisfied with how much or how little they have and at the same time try to be diligent and work hard on what they are responsible for, they are not poor.

> *'We were taught by our parents to be hard-working, live sufficiently, not luxuriously, and try not to spend more than we have. We must work hard and try to live by ourselves without thinking of asking help from others. We needs to only spend money on what we require to live. Being poor does not only mean having nothing, but rather means that one has not enough to satisfy oneself.'*
>
> (A 49 year-old woman in Suphanburi)

[58] In May 2006, Secretary General Kofi Annan presented the Human Development Lifetime Achievement Award to King Bhumibol Adulyadej of Thailand in recognition of the King's contributions to human development, poverty reduction and conserving the environment in the country. This is the first time such an award has been given in recognition of the King's visionary development-thinking, known as "sufficiency economy" philosophy.
The sufficiency economy is a philosophy that emphasises the middle path, inspired by Buddhism teaching, as the overriding principle for appropriate conduct by the populace at all levels. See further information about sufficiency economy via http://www.sufficiencyeconomy.org/old/en/

(4) Land and physical assets

The accumulation of land and physical assets, particularly machinery for farming, were cited as two key drivers of moving out of poverty. Since the majority of households still remain in the agricultural sector, the accumulation of land, either as land owner or land tenant, and land utilisation in terms of increasing land intensity, were thus found to be key factors to facilitate households' move out of poverty. In addition, acquiring modern agricultural machinery and equipment was also a major driver for escaping from poverty.

> *'After getting married, we were living in difficulty because we could only grow rice once a year. Afterwards, about twelve years ago, we were able to grow rice twice a year, so we could sell more paddy. With a higher income, we bought additional pieces of land, and later on we were able to pay all our debts within two years.'*
>
> (A 80 year-old man in Suphanburi)

Table 6.4 Factors of moving out of poverty as perceived by respondents

Factors	Reasons for moving out of poverty	Number of households			%	Rank
		Central	Northeast	Total		
Demographic factors		**5**	**31**	**36**	**42.4**	**II**
	Increase in number of working age members. Children grew up, finished school, could work on farm or find jobs to support family	5	28	33	38.8	1
	Decline in number of dependent members (children) leading to less household expenditure	-	2	2	2.4	7

Factors	Reasons for moving out of poverty	Number of households			%	Rank
		Central	Northeast	Total		
	Being married so that spouse earned money and could help to support households	-	1	1	1.2	7
Asset factors		**17**	**28**	**45**	**52.9**	**I**
Land	Owning more land, by both buying or renting	2	4	6	7.1	4
	Having higher rice-growing intensity (more than one crop a year)	1	1	2	2.4	7
Employment	Having many sources of income, particularly non-farm secure jobs that earn regular income (e.g. own business, salaried jobs, wage labour)	7	12	19	22.4	2
	Diversifying to non-rice crops and livestock farming	2	-	2	2.4	7
Physical	Owning more machinery/ equipment	1	3	4	4.7	5
Financial	Having less/no debts	-	2	2	2.4	7
	Getting higher access to credit	-	1	1	1.2	8
	Receiving a monthly allowance from the government	-	1	1	1.2	8

Factors	Reasons for moving out of poverty	Number of households			%	Rank
		Central	Northeast	Total		
Behaviour and values	Being self-sufficient, becoming thrifty in spending money and working hard	4	3	7	8.2	3
	Receiving help from relatives and neighbours	-	1	1	1.2	8
External factor		**1**	**3**	**4**	**4.7**	**III**
	Rising crop prices	1	2	3	3.5	6
	Favourable economic conditions	-	1	1	1.2	8
Total		**23**	**62**	**85**	**100**	

Source: From the interviews

6.5.3 Explanation for moving into poverty

It was evident from this study that some households had not been poor in rural Thailand, but had become poor over the past two decades. So, what are the key factors or reasons associated with moving into poverty? The results from the interviews of all 15 households that had moved into poverty suggest that the main factors to explain why they had done so, as perceived by the households themselves, can be divided into three main categories: (i) Demographic factors, including an increase in the number of dependents, the breaking up and migrating of family members which reduced the number of earners, (ii) Asset factors including, for example, a decline in the household asset base, such as land holding, access to credit, and (iii) Risk factors, including health problems, death of the household head, and natural disasters.

The key factors that caused 40 percent of the households to move into poverty were risk-related factors. A more disaggregated breakdown shows ill-health as being the most significant factor that households perceived had moved them into poverty. 33 percent of the total households perceived that structural factors were the most important factor underlying their move into poverty, while 27 percent of them cited unfavourable demographic factors, such as a decrease in the number of earners and/or an increase in the number of dependents.

The main causes for moving into poverty perceived by households are classified below according to the importance of each factor.

(1) Ill-health

A more disaggregated breakdown shows that almost one third of the households perceived ill-health as being the most significant factor of moving into poverty. Households with seriously ill members, especially the household heads and income earners, tended to move into poverty. It is evident that, during the two periods of the study, there was a prevalence of earners with long-term illnesses, such as being handicapped or blind as a result of accidents, or with chronic diseases, especially of the elderly, such as heart disease, high blood pressure, diabetes and cancer, which prevented household members unable from working effectively or continue to work. They were unable to provide an income for the family as they used to, especially when they became older. Rather, the family members had to take care of the elderly or sick family members. Moreover, households incurred heavy medical expenses for those facing serious and chronic health problems, and they were unable to handle the cost. In addition, the cost of transportation for travelling from the rural area to the hospital in the city also placed an additional financial burden on households.

> *'Although we could only earn a small amount of income, our children never starved. We provided them with all the meals they needed. However, the turning point for our family was when my husband became disabled more than six years ago as a result of a motorcycle accident. Also now, I am also not in good health. My left eye went blind three years ago; I cannot see like I did before. My health has worsened day by day; my legs and my arms do not function properly. My husband and I could not work on the farm anymore. We had to sell our land and this really pushed our family into hardship. Now the household earnings come mainly from our sons who work as casual wage labourers on construction sites, earning only very low pay day by day.'*
>
> *(A 69 year-old woman in Khon Kaen)*

(2) Household dependency rate

Another important factor of moving into poverty was the higher dependency of the household, accounting for one third of all cases. This was due to an increase in the number of dependents and a decline in the number of working-age members who were the key earners. Over time, there has been an increasing trend of working-age members who have decided to migrate to urban areas or big cities, especially Bangkok, in order to look for work, and some people have also broken away from the main household to create their own families. This has left only elderly members working on the farm without any help from young working-age members. Many household heads indicated that their children were no longer interested in working as farmers, since in their view, this kind of job only paid small wages and required a lot of hard work. Therefore, most of their working-age members tended to migrate to look for job opportunities in big cities after they finished school.

Those members who moved out to other cities left out their parents to live alone in their home town and, in some cases, they even brought their children back to their grandparents, who were getting older and older. This was because working-age members normally had to spend most of the time on their work and had no time to even take care of their own children. Thus, the number of dependents, including both children and the elderly, increased while the number of income earners in each household declined, resulting in a high rate of dependency. This particular household living pattern (the presence of first and third generations) was mainly found in the Northeast region.

As shown in section 4.3.1 of Chapter 4, there was a higher proportion of single generation households (constituted of only one generation) and skipped generation households (constituted of first and third generations) than other types of households over time.

> *'We have seven children; four sons and three daughters. Right after they completed primary school level, they all helped us to work on the farm. But now, they have all moved out and have their own families. Five are living in Bangkok and the other two are in Nakonrachaseema province. Some of them send us some small amounts of money, but only once a year. It is not enough to cover the expenses of the two children they left with us. We need to raise them, and my husband and I are getting older nowadays, so we don't have much energy to work anymore.'*
>
> (An 84 year-old man in Khon Kaen)

(3) Land and financial assets

Asset depletion was also perceived by the households as being a key factor of why they moved into poverty. The first key asset was a decrease in landholding. Since most rural households rely on farming as their major source of income, the lack or depletion of land assets became one of the major causes of moving into poverty. In most cases, the landholding per household had been reduced because they had been forced to sell a portion of land to earn money for their living and/or pay back debts they had incurred. Meanwhile, some households had also divided their land into smaller plots for their children to inherit according to the Thai culture, thus reducing their landholding. As shown in section 4.7.3 of Chapter 4, the average land size per household of those moving into poverty had declined from 5 rai in 1988 to 3 rai in 2009. Most households in this particular group only retained a small area of land to grow rice for their own consumption, but not to sell commercially. Some landless households who earned a very low and unstable income from daily wage jobs had to spend money to purchase rice. Another key asset that caused households to fall into poverty was indebtedness. Facing huge amounts of debt and lack of access to credit was perceived by households as being key factors of moving into poverty. This is also corresponding with what appeared in Section 4.7.5 of Chapter 4 stating that the moving into poverty had less access to credit compared to the never poor households.

'We used to live well but now we have no land. My husband used to work in the government sector. He earned a salary and thus our family lived quite well. Unfortunately, he lost a lot of money gambling on football, so we had to sell all our land to pay off some debts. Our house was also mortgaged. I am now selling noodles, earning money day by day. Being asked for money from debtors every single day is really painful. I still have no idea how I can pay those debts back with 20 percent interest. It's too much to handle.'

(A 59 year-old woman in Khon Kaen)

Table 6.5 Factors of moving into poverty as perceived by respondents

Factors	Reasons for moving into poverty	Number of households			%	Rank
		Central	Northeast	Total		
Demographic factors		**0**	**4**	**4**	**26.7**	III
	Decline in the number of working age members as a result of migration in order to set up their own family and find jobs. At the same time, increase in the number of elderly and children.	-	4	4	26.7	1
Asset factors		**2**	**3**	**5**	**33.3**	II
Land	Owning less land or becoming landless due to selling land to others or distributing into small plots as inheritance for children	1	1	2	13.3	2
Financial	Experiencing a high level of debts and lack of access to credit	1	1	2	13.3	2

Factors	Reasons for remaining in chronic poverty	Number of households			%	Rank
		Central	Northeast	Total		
Behaviour and values	Engaging in negative behaviour such as alcoholism and gambling.	-	1	1	6.7	3
Risk factors		**3**	**3**	**6**	**40.0**	I
	Experiencing ill health due to disease or accidents.	1	3	4	26.7	1
	Death of household heads	1	-	1	6.7	3
	Faced with crop losses from natural disasters or crop diseases	1	-	1	6.7	3
Total		**5**	**10**	**15**	**100**	

Source: From the interviews

6.5.4 Explanation for remaining never poor

The findings from the interviews of the 121 households who reported that they had never been poor suggest that there are two key factors to explain why households remain non poor: (i) Asset factors were cited as the most important reason for remaining never poor, accounting for more than 90 percent, including the behaviour and values of households to work hard and the diversification of income-generating activities, both non-farm and non-rice crops and (ii) Demographic factors were another important factor, accounting for 20 percent of the households who were never in poverty. These households explained that the reason they had never experienced poverty was because their children had grown up, finished school, found jobs and helped to support them. It is worth noting that the never poor households had also experienced negative events and shocks, such as ill health and the death of household heads, just like the other groups. However, it is likely that this type of household was able to cope with such events due to their fundamental supportive factors, such as high initial level of asset base and well-educated children.

Classified by each group, the main reasons for remaining never poor as perceived by households are disaggregated below in order of importance.

(1) Diversification of income sources

About 30 percent of all the households who had never experienced poverty over the period of the study pointed out that the diversification of the household's income sources from the farming to the non-farm sector, non-rice crop farming and non-crop agricultural activities, was found to be the most important factor of being never poor. As for the households that remained non-poor, the household head and working-age members were mainly engaged in non-agricultural employment, including regular waged labour and salaried work, either in the government or private sector, and self-employed businesses. These types of non-farm employment provided regular and secure earnings that enabled households to even out their income and made them resilient to uncertainties and shocks. In addition, income diversification into non-farm activities also helped households not to depend on a single source of income for their living and to cushion themselves not to move into poverty.

Not only was a shift of employment into non-agricultural sectors found to significantly sustain the income of the non-poor, but agricultural diversification also became another important source of income for the never poor households. It appeared that some non-poor households who remained in the agricultural sector tended to diversify their income into non-rice cash-crop farming (such as water chestnuts for households in the Central region, sugar cane, cassava and maize for households in the Northeast region), as well as other non-crop farming activities, including livestock.

> *'My family lives quite well. Although we are not rich, we have never been poor. We work and have many sources of income. Apart from working on the farm, I also used to serve as deputy of the village head for nearly twelve years from 1985 to 1997. My two sons also participate in the non-farm sector apart from working on the farm during the harvest season. One is working as a salaried employee at the hospital and the other is working as a clerk at an automobile company in Khon Kaen city. They receive regular salaries which have become an additional source of income for our family to complement the farm income.'*
>
> (A 73 year-old man in Khon Kaen)

(2) Behaviour and values

The households who had never experienced poverty emphasised the significance of being conscientious, showing endurance, being honest and saving. They said that their parents had taught them to become hard-working people and to endure any difficulties they encountered in life. which basically meant not easily giving up on things. In addition, it was also important to be thrifty, be self-sufficient and save as much as possible.

> *'I would say that working hard is the most important reason why our family has never been poor. My parents taught me and my brothers to work hard every day if we wanted to live well. My wife and I also told our children to work hard. I told them that my wife and I do not have much land or assets to inherit them, so they need to work hard and try not to save more and more.'*
>
> (A 68 year-old man in Suphanburi)

(3) Education

Most never-poor households cited investment in education as the third important factor for staying non-poor. Investing in children's education was likely to increase their opportunities to access formal lucrative work and help facilitate their movement from low-wage agricultural activities to high-wage and high-skilled non-agricultural employment.

This is also consistent with the finding in the descriptive analysis part in section 4.7.2 of Chapter 4, suggesting that, among four poverty categories, the never-poor household group had the highest initial education of 4.6 years in 1988. In addition, the data also shows that there were occupational shifts of the never-poor households to increasingly participate in non-agricultural activities, particularly regular waged labour and salary-earning work.

'I finished lower primary school, while my wife had a primary education. I was offered a job as a temporary civil service worker in Tambon (sub district) Administrative Office for nearly fifteen years. I earned a regular salary. While it wasn't a huge amount, I was paid every month, which helped to support my family a lot. I realised how important education was. It could enhance our opportunities to get better high-paid jobs in the government and the private sector. So my wife and I have tried to support our children's education in every way we can. Two of the three children have graduated at university level. One is now working as teacher in a secondary school, while another is working for a private company in Bangkok.'

(A 52 year-old man in Khon Kaen)

Table 6.7 Factors of being never poor as perceived by respondents

Factors	Reasons for being never poor	Number of households			%	Rank
		Central	Northeast	Total		
Demographic factors		**5**	**4**	**9**	**7.4**	II
	Large number of working age members.	5	4	9	7.4	5
Structural factors (Asset ownership)		**61**	**36**	**97**	**92.6**	I
Employment	Diversifying sources of household income to non-farm sectors and/or non-rice crops and livestock farming.	22	21	43	35.5	1
Education	Investing in children's education. Children grew up, finished school, could get well-paid jobs and help support family.	9	6	15	12.4	3

Factors	Reasons for being never poor	Number of households			%	Rank
		Central	Northeast	Total		
Land	Owning an amount of productive land.	5	1	6	5.0	6
Financial	Having no debts and access to credit	9	3	12	9.9	4
Behaviour and values	Attempting to work hard, save more, be self-sufficient and enduring	25	11	36	29.8	2
Total		**75**	**46**	**121**	**100**	

Source: From the interviews

6.6 Case studies from the life history interviews

One of the key objectives of this research is to further explore poverty dynamics by utilising the benefits from integrating research methods between a quantitative analysis of panel survey data and a qualitative analysis of life history interviews. The selection of households for life history interviews was purposely random based on the dynamic group in the panel sample. It is expected that using life histories can support and supplement the understanding of poverty dynamics derived from conventional household surveys in terms of households' life conditions from the perception of local people, as well as the real experiences given by household heads. While household survey was conducted in two specific reference years of 1988 and 2009, life history was based on retrospective interviews over decades of houseohold's historical events between the periods of 1988-2009.

Four households were randomly selected from each village to represent the four different types of poverty dynamics identified by the poverty transition matrix from the quantitative surveys in 1988 and 2009 as shown in Section 4.5 of Chapter 4. Therefore, the life history interviews were carried out with twenty four households selected from six villages in two provinces.

The method of life history approach in this study follows the work of Davis (2006, 2009, Davis, 2011) and Lawson, Hulme and Muwonge (2007). A diagram of the household's life history was drawn during the interview with the help of the interviewees. The vertical axis in the life history diagram indicates people's perception of their poverty status and living condition (roughly known as *'thana kwam pen yuu'* in Thai, translated as living status which Thai people understand it in the same way to poverty status), while the horizontal axis indicates the time span. The levels of the poverty status of the households in the life history diagram were based on the poverty status classification defined by the households as shown earlier in Section 6.3.2.

The four life histories selected to be case studies for the four categories of poverty dynamics in this section are described below.

6.6.1 Case 1: moving out of poverty (poor in 1988 but not poor in 2009)

Mr. A was born in 1937 in Baan Koak, Khon Kaen province. Due to his family's financial problems, his parents sold all their land and sent him and his brother to be ordained and study in the Buddhist temple when he was 8 years old. However, he had to drop out from school after the death of his father to help his mother by working on the farm at the age of 15. Since then, he had worked as a waged labourer with a construction company earning only 10 baht (equals to 0.20 pound) per day for more than 10 years. He became one of the team of labourers employed to construct the Ubonrat dam, the first and largest dam in the Northeast region, when it was first built in Khon Kaen. In 1964, he got married and had four children. Unfortunately, his first son was found to be retarded when he was born in 1965, so he sold four buffalos to obtain the money for his son's medical care. He had worked as a waged labourer on construction sites and had been paid 30 baht (equals to 0.6 pound) per day until 1978. In the same year, his family went through the worst time when there was a huge flood that destroyed all the crops for that year. He said that his family had experienced the poorest position ever. *'I had no money left during that time. Luckily we still had enough rice stocked up in the barn for our children to eat. Some days we had rice enough for serving one meal only.'* He had to sell all eight buffalos and all 6 rais (or 1 hectare) of land to obtain some money for the household's livelihood.

In 1980, the government established a farm land consolidation project[59] and his family was allocated twenty rais (or 3.2 hectares) of farm land. In addition, he said the on-farm water delivery system serving individual farms helped to improve the quality of life for most farm households in the village since it provided sufficient water for cultivation all year round.

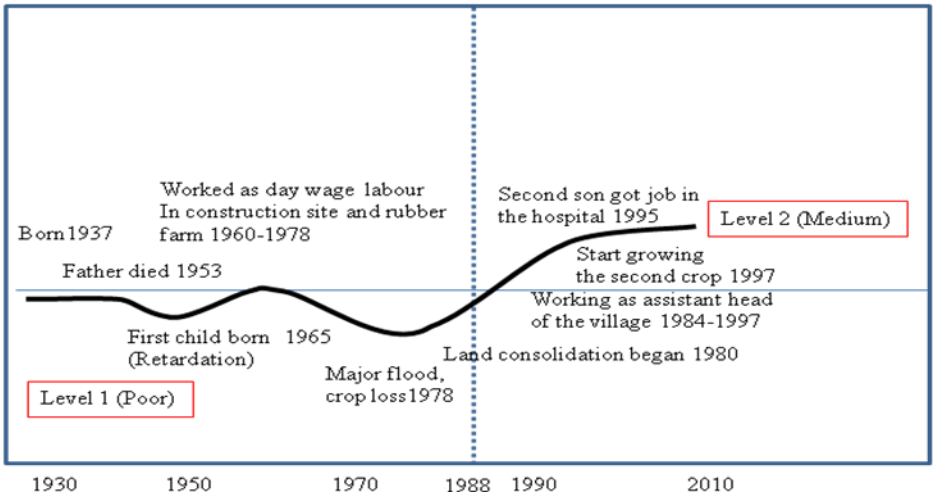
In 1984, at the age of 47, he was elected as assistant head of the village and earned a regular salary, which had become the turning point for his family. According to him, earning a regular income enabled him to cover household expenditure and support all three children to complete lower secondary school. After finishing school in 1995, his second son worked as full-time employee in the hospital and his third son also found a well-paid job as a clerk in an automobile company located in a neighbouring village. After serving as assistant head of the village for almost fifteen years, he left the position in 1997 and began to invest some of his savings in the farm and bought new agricultural machinery in the form of power tillers. In 1997, he started to grow a second rice crop after electricity was set up and distributed to his farm. Apart from the earnings from non-farm employment, his family received a great deal of money from a second crop production, which had significantly improved their lives. He stopped working on the farm in 2000 and now only worked as the village's local wisdom man (or known as *'Jum'* locally, translated as wise and respectful man) since he had a lot of knowledge about how to organise local ceremonies. The household's source of income was mainly his sons' salaries.

Mr. A's life trajectory is shown in Figure 6.1, which illustrates a gradual improvement in his overall life conditions, from a poor childhood, slightly poorer when his children were young and experiencing the flooding (level 1: poor status), to a better medium position (level 2: average status) when his children grew up, entered the workforce and earned an income to help to support the family. This suggests that an increase in the number of working members and a reduced number of dependents,

[59] The farm land consolidation project has been established under the Land Consolidation Act officially promulgated in 1974 within the Ministry of Agriculture. This project aims to intensify agriculture on selected areas in the Northeast region, mainly through the improvement of drainage for efficient water control down to the farm level, construction of farm roads, the farm plot reallocation and levelling. PALAYASOOT, P. 2007. The Evolution of Irrigation and Rice Growing Production in Thailand. *Keynote Paper*. Bangkok: Ministry of Agriculture and Cooperatives.

specifically children, contributed to the moving out of poverty for Mr. A's family. According to his life history, the dynamics of poverty from a poor to a non-poor status (from level 1 to level 2) most likely occurred in 1995 when his two sons were employed in salaried jobs and were able to help to support the family.

Figure 6.1: Key events from the life history interview
with a moving out of poverty case.
(Mr. A)



6.6.2 Case 2: moving into poverty (non-poor in 1988 but poor in 2009)

Mrs. B is a 70 year-old woman who now lives with her second husband. Sanguem grew up in a poor family. Her parents were landless farmers. In 1961, she got married at the age of 21. She has five children, four sons and one daughter. Her first husband also came from a poor family; however, he died from a lung cancer in 1976. Her eldest son helped her to work on the farm. After completing primary educational level, all children migrated to other cities to look for jobs and set up their own families. She was left alone for almost two years.

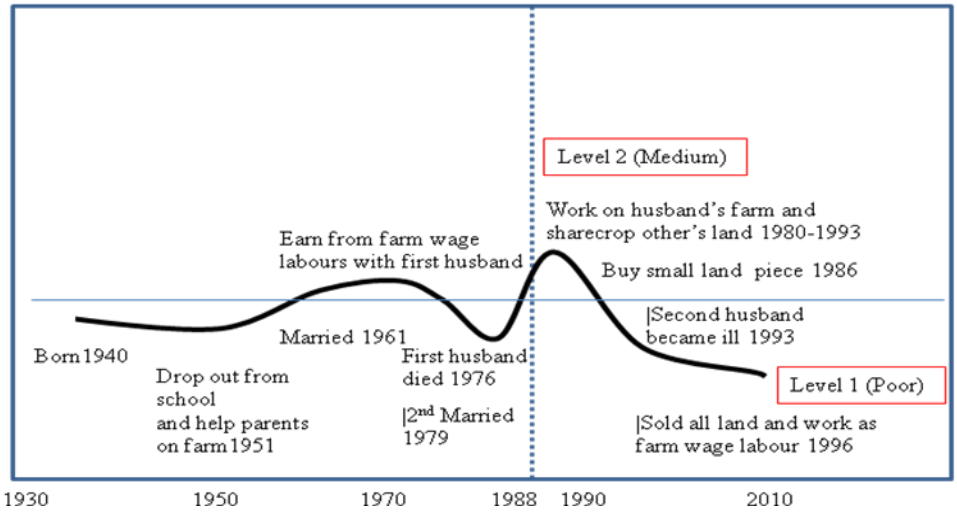
She married her second husband in 1979 and had two sons. Mrs. B and her new husband cultivated rice on her husband's owned farm (4 rais or about 0.6 hectares) and rented 30 rais (or 5 hectares) of other people's land for sharecropping. Her husband also worked as a casual waged labourer on construction sites during the drought season. In 1986, with a small amount of savings, they bought a small piece of land (0.5 rais or

about 0.08 hectare) from her uncle for 5,000 baht where they currently live. For a time period after her second marriage, she considered that her family lived quite well. However, in 1993, her second husband became ill as a result of heart disease and a neurological disorder that made him unable to walk. She had to work alone to support her family and also pay for her husband's medical treatment. '*I brought him to the district hospital which is located about 40 kilometres away our house. Each time we needed to spend a lot of money both for his treatment and for transportation costs.'* Without help from her husband, she had to stop working on rice cultivation and decided to work as a farm waged labourer on other people's farms (e.g. water chestnut harvesting) to earn her living day by day. In 1996, she sold all her husband's land to support the family's expenditure and to pay back some debts she had incurred by borrowing from neighbours. She considered the year 1993-1994 to be the worst time due to her husband's disability. In 1998, her first son got a job in a textile factory in Bangkok, but never sent her money, while the youngest one left school to help her to work as a farm waged labourer when he was fourteen years old. More recently, Mrs. B had suffered health problems associated with aging. She could not work for the same long periods of time as before. Her only sources of income were primarily her son's farm labourer's wages and her and her husband's monthly allowance for the elderly (500 baht per month). *'Now my son and I are working as farm waged labourers. What we do is collect and peel water chestnuts on other people's farms. The hiring rate is very low, only 40 baht per bucket and we earn only 100-120 baht per day. Also, we cannot find work every month.'*

The life history of Mrs. B depicted in Figure 6.2 below illustrates several key events in her family, some of which caused a decline and some an improvement in their overall life condition and transition of poverty status, both moving into and out of poverty. However, during the period of this study between 1988 and 2009, it appeared that her family had entered poverty by moving from level 2 (medium) to level 1 (poor). Her husband's health problem and high health care expenses were considered to be key contributors to moving into poverty. Her family's transition from non-poor to poor (from level 2 to level 1) corresponded with the time her second husband, as the major

income earner, experienced chronic ill health problems and was unable to work to support the family.

Figure 6.2: Key events from the life history interview with a moving into poverty case. (Mrs. B)



6.6.3 Case 3: chronic poor (poor in both surveyed periods)

Mr. C is aged 78 and currently lives alone. He was born into a very poor family. His parents were landless farmers and sharecropped other people's farm for rice cultivation. He went to primary school for only two years and dropped out when he was eight years old in order to help his parents to work on the farm since they could not afford the school fees and transportation costs. His father became ill with a brain tumour for several years and died in 1944 when he was only 12 years old.

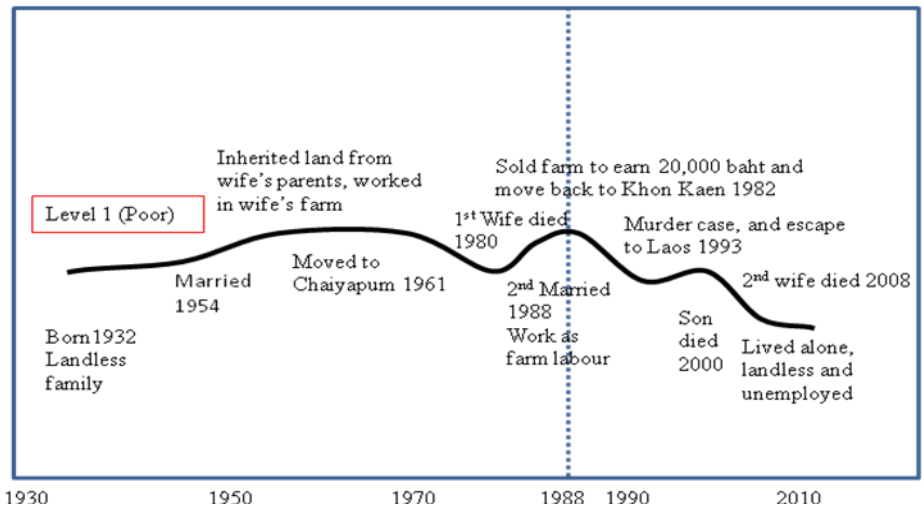
He got married in 1954 and had four sons. His wife inherited some small parcels of land (3 rais or 0.5 hectares) from her parents. About six years later, they sold all the land in Khon Kaen and relocated to Chaiyapum, the province in Northeast region, where they worked on their own farms. In 1980, his wife died from cancer when his youngest son was 10 years old. Two years later, Mr. C decided to sell his wife's land and house, earning about 20,000 Baht, before moving his family back to Khon Kaen. According to him, most of the money from the sale of the land went on supporting his sons' schooling.

In 1988, he married his second wife and had no children. As a result of being landless, he and his second wife were employed as farm waged labourers, growing taro trees and collecting some forest products. Two of his sons (born to the first wife) worked as day waged labour on construction sites in Khon Kaen while the third son migrated to Bangkok. In 1993, he was convicted on a charge of murder. He escaped to Laos to work as a casual waged labourer for almost four years before returning to Thailand to live with his wife again. During that period, his wife earned small amounts of money from day wage employment and remittances received from her sons. After his return, Mr. C worked as a farm waged labourer earning only 80-100 baht per day. In 2000, his youngest son died from an accident while his second wife also died in 2008, a year before the interview. After the death of his wife, he had lived alone and was unemployed. He said that the most painful time was when he had insufficient money to buy food and needed to ask for money and food from neighbours. *'Some households chased me and said that I should never come to their house again. Some days I had nothing to eat, only bananas and water.'* His only source of income is the monthly allowance for the elderly from the government (500 baht per month).

Mr. C's life history illustrates several negative events that kept his family in chronic poverty over the long-term. They were primarily caused by the lack of land assets, which is the key endowment for farm households. Low educational level (less than primary school) also restricted him to participate in low-return wage employment. In addition, the frequent deaths of household members of working age from killingwas also one of the major factors that caused the household to remain in poverty.

Figure 6.3: Key events from the life history interview with a chronic poor case.

(Mr. C)



6.6.4 Case 4: never poor (non-poor in both surveyed periods)

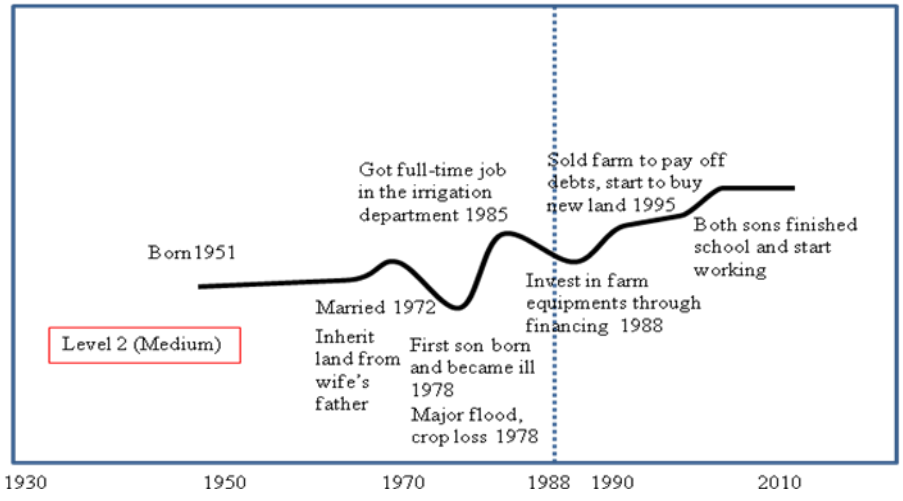
Mr. D was born in 1950 and grew up in a farm family with three elder brothers and one sister. His parents were landless famers. After finishing primary school, he helped his parents to work on other people's farms and also fed a number of cows and buffalos. He got married in 1972 and had two sons. His wife inherited a land parcel of about 15 rais (or 2.4 hectares) from her father. After marriage, he found a job as a waged labourer in the mines in the South of Thailand. In 1978, his second son was born sick, so he decided to return to Khon Kaen. During that year, there was a severe flood that destroyed all his crops. This was considered as being the most difficult year for his family due to large crop losses and high expenditure in caring for their newborn son.

His mother died in 1982 and he inherited 4 rais (or 0.6 hectares) of land. A significant point was in 1985 when Soon was employed as a full-time driver in the Department of Irrigation under the Ministry of Agriculture and Cooperatives (MOAC) and received a salary. He said that being employed in salaried work improved his family's life condition in that it provided a regular income. He also had the advantages of becoming a member of the MOAC to gain access to agricultural credit. In 1988, he took out a loan of 300,000 baht in order to purchase new agricultural equipment and machines including a four wheeled tiller, thresher and miller. In 1995, he sold some of

the land he inherited from his mother to pay off the debts incurred by investing in the new agricultural equipment. In addition, he also invested some of the money left from selling the land in buying other land nearer the house. Despite the fact that he still had some debt to repay, he could earn a great deal of income by hiring out his thresher, miller and tractor. In 1996, his first son completed his education at the upper secondary level. However, he was arrested due to fighting with a friend, and Mr. D had to pay bail of about 20,000 baht to keep him out of prison. Two years later, his first son got married and used 150,000 baht for a dowry. His daughter-in-law and his first son helped him on their own farm. In 2000, his youngest son finished vocational education school, which required two more years of study after secondary school and started working in a steel factory in Bangkok. He regularly sent remittances home.

The life history of Mr. D presented in Figure 6.4 illustrates the key reasons why the household did not move into poverty and remained never poor. In this case, having the chance to obtain a salaried job as a driver in the Ministry supported his family's upward mobility and helped them to remain non-poor. The salaried employment provided him and his family with a regular and stable income, as well as enabled them to even it out without having to rely on a single source of unstable farm income for their living. In addition, the advantage of participating in salaried employment included access to credit that was used to productively invest in accumulating assets, including land, agricultural assets and the children's education.

Figure 6.4: Key events from the life history interview with a never poor case.(Mr. D)



6.7 Conclusion

This chapter has drawn on qualitative information collected from household interviews across rural villages of Thailand. Using a case study approach, the chapter has provided insights about poverty dynamics from the qualitative analysis of the privileged perception of local people. This chapter had two key objectives, the first of which was to understand the concept and classification of poverty, while the second was to examine transition patterns and underlying factors, as well as the causal processes of poverty dynamics between 1988 and 2009 by using information collected from local people's experience and life history events.

From local people's perspective, poverty can be defined in multidimensional ways, which go beyond the poverty line conventionally defined in the income approach. The qualitative method tends to capture poverty as a combination of the deficiency of necessities including money, household assets, livelihood strategies, employment, health, and people's values and attitudes. In order to assess poverty dynamics over time, the poverty status of households in both regions was examined to understand the general characteristics of poor and non-poor households. As distinguished by the households, poverty status can be classified into three common categories: poor, average and rich groups.

Based on the analysis of poverty dynamics between 1988 and 2009, it appeared that there was less poverty transition than the quantitative survey results. The most common poverty dynamic pattern was remaining non-poor, in that half of the surveyed households perceived themselves as being non-poor. However, the patterns of poverty transition were in line with the results of the quantitative survey. The proportion of households who perceived that they had moved out of poverty was larger compared to those who thought they had moved into poverty, which implies that there has been a significant reduction of household poverty in Thailand in the last twenty years.

The analysis of factors associated with the experience of poverty dynamics shows that local people perceived different underlying factors for moving into and out of poverty, as well as for remaining in chronic poverty and being never in poverty. The reasons for moving into and out of poverty are not just simply opposite to each other.

The major factors associated with moving out of poverty, as described by the households in the sampled villages in rural Thailand, included in order of importance, (i) lower dependency as a result of increasing numbers of working-age members in the household, (ii) diversification of income sources into non-farm salaried employment and non-rice crop farming, and (iii) the significance of being satisfied and hard working. Most of the households interviewed agreed that they were well-off today compared to twenty two years ago since their children had already grown up, completed school, entered the workforce and were earning an income to help to support the family. Most households moving out of poverty had also diversified their income sources to secure formal employment, as well as moving to other major non-rice crop and livestock farming as a dynamic way to even out their income to make them resilient to uncertain farm income.

While the major factors of moving households out of poverty mainly focused on non-farm employment opportunities in order to improve poor households' incomes, the important reasons associated with moving into poverty included (i) ill health-related problems and higher dependency rates due to the migration of working-age members, (ii) lack of or depletion of land and indebtedness, and (iii) the negative behaviour of family members, including excessive alcohol consumption, smoking and addiction to gambling.

The findings from this chapter show that the qualitative methods, namely, semi-structured interviews and life history interviews enabled an understanding of the transition patterns and underlying factors associated with poverty dynamics. A number of factors were consistent with the findings from the quantitative data analysis. For example, the qualitative interviews also identified long-term livelihood strategies adopted by households, such as the diversification of income sources into non-farm employment activities as a significant factor of poverty transition. However, some factors were added and supplemented the results of the survey, such as households' dependency rate, shocks from ill health problems, as well as positive and negative behavioural factors. The life histories also provided additional insights into the underlying processes of poverty change and also the complex dynamics of the socio-economic mobility of households. For example, structural processes that increased

households' dependency as a result of the migration of working-age members were difficult to explicitly measure and capture in a panel survey. Therefore, it is likely that the key findings from the qualitative approaches were able to complement a more quantitative variable-based approach to studying poverty dynamics. In order to further inform the value added and provide evidence whether different approaches provide similar or contradictory results of poverty dynamics, a comparative analysis of the two approaches will be demonstrated in Chapter 7.

CHAPTER 7

Combining quantitative and qualitative methods in the analysis of poverty dynamics in rural Thailand

7.1 Introduction

A number of studies have used different methodological approaches in an attempt to acquire a better understanding of the factors and processes associated with poverty dynamics in developing countries. Conventionally, studies of poverty dynamics were either purely quantitative or qualitative in nature. This has led to a strong division between quantitative and qualitative approaches in the analysis of poverty dynamics. Learning about poverty dynamics has been primarily based on quantitative panel studies (Hulme and McKay, 2007, Addison et al., 2009). The quantitative approach includes several methods; for example, a descriptive analysis (see for example Sen, 2003, Hossain, 2009) and a multivariate regression analysis including discrete and/or continuous variable models (see for example Jalan and Ravillion, 2000, Alisjahbana and Yusuf, 2003, Quisumbing, 2007, Justino et al., 2008, Lohano, 2011, Baulch and Dat, 2011). Meanwhile, applying the qualitative approach to a poverty dynamic analysis can make use of several methods, including for example, community-based methods used in repeated village studies (see for example Van Schendel, 1981, Kabeer, 2004), life history interviews (see for example Bird and Shinyekwa, 2003, Lawson et al., 2007, Davis and Baulch, 2009) and the recent use of a new participatory approach to poverty dynamic appraisal (see Shaffer, 2002, Krishna et al., 2006, Kristjanson et al., 2009, DeWeerdt, 2010, Krishna, 2010a).

Over recent years, there has been increasing recognition that combining a quantitative income-based and qualitative assessment approach of poverty dynamics may provide considerable advances toward a deeper understanding of contemporary research of poverty dynamics, as well as the formation of effective poverty reduction policies (Lawson et al., 2006, Adato et al., 2007, Lawson et al., 2007, Hulme, 2007, Davis and Baulch, 2009, Addison et al., 2009, DeWeerdt, 2010). As stated earlier in

Section 3.2 of Chapter 3, several studies provide evidence that combining methods in longitudinal poverty research provides more value added than single-method studies by drawing on the strengths of each approach. These combined methods capture the strength of the quantitative approach in identifying and aggregating poverty and understanding and correlating the characteristics of the poor, and the strength of the qualitative approach in providing a broader definition of poverty, improving the survey design, and gaining more insights into the unanticipated processes and contextual factors that underlie different categories among the poor that are not easily captured in quantitative studies.

Despite the increasing recognition of the advantages of combining qualitative and qualitative approaches, there is still scope for further strengthening the association between them. Some previous empirical literature on poverty analysis has suggested that income poverty results based on the quantitative approach have a positive correlation with the findings from a subjective qualitative approach (Temu and Due, 2000, Kingdon and Knight, 2006), and other studies indicate that the two approaches are compatible and complement each other (Scoones, 1995, McGee, 2004). However, a number of studies have found huge discrepancies between the quantitative and qualitative approaches to poverty, which suggests that people who are identified as being poor according to income poverty do not always consider themselves to be poor according to a subjective poverty assessment (Laderchi, 1997, Jodha, 1998, Ravillion and Lokshin, 2002, Rojas, 2008, Caizhen, 2010).

However, only a few empirical studies in poverty dynamics literature contribute to the relationship of household poverty dynamics between income poverty measures and people's subjective perception of poverty (see for example Davis, 2006, Radeny and Berg, 2010). Therefore, in order to further inform the value added and the debate about the relative strengths and weaknesses of each approach, there is a need for a comparative analysis of the two approaches to provide evidence of whether or not the different approaches provide similar or contradictory poverty dynamics outcomes.

This chapter aims to analyse and triangulate the findings from the qualitative interviews with those from the panel survey data. This will help to comprehend the complementarities and contrasts between the two different methodological approaches. This chapter contains six sections and is organised as follows. Firstly, a comparison of poverty levels between quantitative and qualitative approaches is determined. Secondly, the patterns of poverty dynamics are evaluated between income and self-perception measures. Thirdly, the key characteristics of households classified differently by the two approaches are further explored in detail. Fourthly, in order to understand the strengths and weaknesses of each methodological approach, the key factors associated with the four categories of poverty dynamics are compared between the two approaches. Fifthly, the case studies from the life history interviews are described together with life trajectory diagrams, and the conclusions of the chapter are presented in the last section.

7.2 Poverty levels between quantitative and qualitative approaches

This section contains a comparison of poverty levels between quantitative and qualitative approaches. A panel survey data analysis and household self-perception assessment were adopted to explore changes in poverty levels between 1988 and 2009. It can be seen from Table 7.2 that poverty levels from both approaches showed similarities in the overall declining poverty trend over the studied periods. According to the self-rated assessment of poverty, poverty levels tended to decline from 42 percent in 1988 to 15 percent in 2009. Poverty levels using the poverty line from the quantitative method also decreased from 52 percent in 1988 to 17 percent in 2009, though slightly higher than the self-rated measures.

There were regional differences in the poverty levels from both approaches. The poverty incidence was higher in the Northeast region than in the Central plain; however, the Northeast experienced a larger decline, which is also consistent with the poverty trend at country level. In its annual report on the poverty situation, Office of the National Economic and Social Development Board (NESDB) stated that a steady decline in poverty rates at the national level over the past decade could be attributed to the overall economic expansion of the Thai economy, rising agricultural prices and successful measures of poverty reduction, such as welfare provision (NESDB, 2011).

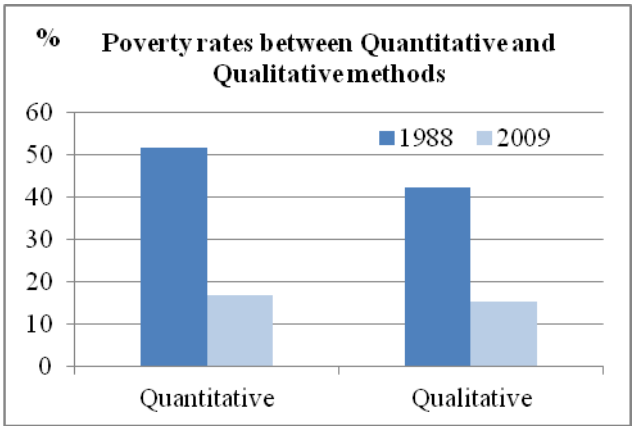
Table 7.1: Poverty levels between quantitative and qualitative approaches

(%)	All area		Central plain		Northeast	
	1988	2009	1988	2009	1988	2009
Income poverty*	51.7	16.7	30.8	11.2	68.4	21.1
Self-rated poverty	42.1	15.4	27.1	11.0	54.1	18.8

Note: * based on Thailand's official poverty line released by Office of the National Economic and Social Development Board (NESDB)

Source: Author's calculation

Figure 7.1: Poverty levels between quantitative and qualitative methods



A comparative analysis of poverty levels between the two approaches presented in Table 7.2 shows that about 70 percent of the households classified as income poor in 1988 were also classified as poor households by the self-rated qualitative method, while 89 percent of the non-poor households also perceived themselves as non-poor. In 2009, 59 percent of the income-poor households were classified as being poor by the self-rated method, while 94 percent of the non-poor viewed their households as being non-poor. Overall, there was a higher level of convergence between the two approaches for non-poor compared to poor households, which suggests a strong positive relationship in the classification of non-poor households by the two approaches. This means that more income-non-poor households reported their household status as being non-poor, while relatively fewer income-poor households self-categorised themselves as being poor in both studied periods.

Nevertheless, there were a number of discrepancies between poverty levels indicated by the two approaches. The data in Table 7.2 indicates that there were higher proportions (an average 35 percent between the two years) of households who still remained in income poverty but self-reported their status as being non-poor (this group can be simply seen as satisfied poor households) compared to an average 8.5 percent of households who were income-non-poor but perceived themselves as being poor (this group can be seen as dissatisfied non-poor households).

To determine whether or not the dissimilarities in poverty levels from both approaches were statistically significant, a Pearson chi-square statistic[60] was applied at this stage. The results of the test of independence revealed that the chi-squared statistic in both years was statistically significance, which firmly rejects the null hypothesis that the income measure and self-rated qualitative method are independent (see Table 7.2). The chi-squared test of independence only illustrates whether or not two variables are independent of each other; however, it does not provide the degree of correlation or the extent to which the two variables are correlated. Cramer's V[61] is a measure of the association between two discrete categorical variables (e.g. yes/no, poor/non-poor, success/ failure). In this analysis, the Cramer's V statistic was more than 0.5, indicating that the association between quantitative and qualitative is fairly strong.

Table 7.2: Comparison of income poverty and self-rated poverty in 1988 and 2009

Income poverty	Self-rated poverty				Household numbers in 1988	Household numbers in 2009
	1988		2009			
	Poor	Non-poor	Poor	Non-poor		
Poor	70.4	29.6	59.1	40.9	125	44
Non-poor	11.3	88.7	5.6	94.4	115	196
Pearson chi2	85.8		78.8			
Cramer's V	0.60		0.57			

Source: Author's calculation

[60] Pearson's chi-squared test is generally used to evaluate two types of comparison: tests of goodness of fit and tests of independence. A test of independence, or known as a test of homogeneity, assesses whether paired observations on two variables, expressed in a two-way table, are independent of each other or not.

[61] Cramer's V value varies from 0 (corresponding to no association between the variables) to 1 (complete association) and can reach 1 only when the two variables are equal to each other.

7.3 Poverty dynamics between quantitative and qualitative approaches

The patterns of poverty dynamics between income and self-perception measures were evaluated, and it appears from Table 7.3 that both approaches demonstrate a similar pattern of poverty dynamics, in which substantial mobility across poverty categories could be observed. There was a greater proportion of households who experienced poverty transitions, including moving into and out of poverty, than those remaining in chronic poverty. This trend was also in line with poverty dynamic patterns in other developing countries, namely Bangladesh, China, India, Indonesia and Vietnam (Dercon and Shapiro, 2007). Both approaches also suggest that the majority of studied households were able to move out of poverty which were greater than those who moved into it.

However, there were some differences in poverty movement between the two approaches. The quantitative method showed a greater number of poverty transitions than the qualitative method. This can be explained by the fact that income poverty is likely to be varied and affected by external shocks, such as weather uncertainty, price volatility and yield fluctuation as well as measurement errors around a poverty line, while self-rated poverty measures not only capture income for meeting basic needs, but also include household's assets, livelihood strategies, employment, health, and people's values and attitudes. These indicators provide a generally broader concept of poverty and are likely to be more stable than income poverty, and do not depend on the cut-off of a poverty line. Recent qualitative studies have also highlighted the significance of household assets as being a more appropriate measure of poverty because it is likely that asset levels are less vulnerable to transitory shocks (Carter and Barrett, 2006, Burke et al., 2007).

In addition, similar to the findings of poverty levels, regional differences in poverty dynamics were also noticeably apparent from both approaches, as shown in Figure 7.2. The findings from both approaches demonstrate that the proportion of households remaining in chronic poverty in the Northeast region was higher than in the Central plain. However, a higher proportion of households moving out of poverty were

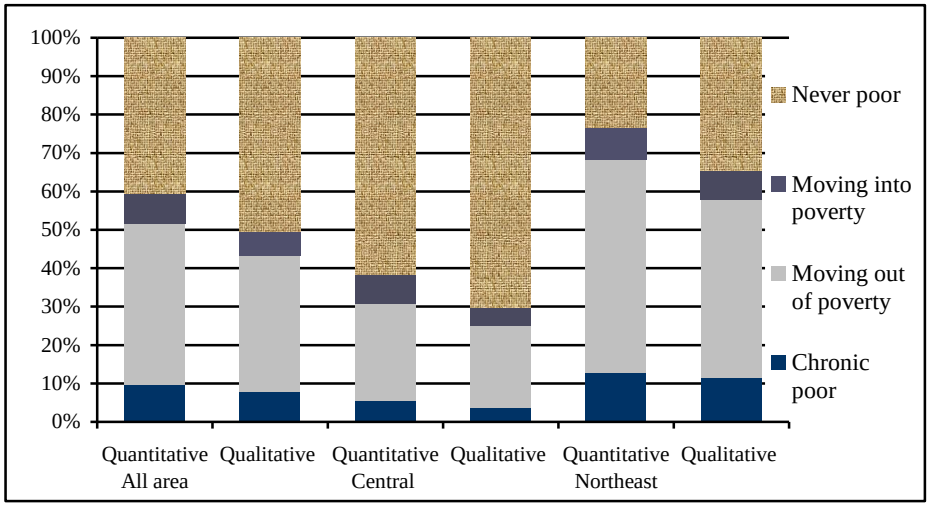
observed in the Northeast than in the Central region. Meanwhile, there was almost the same proportion of moving into poverty households in both regions.

Table 7.3: Poverty dynamics between quantitative and qualitative approaches

(%)	Quantitative approach			Qualitative approach		
	All area	Central	Northeast	All area	Central	Northeast
Chronic poor (Poor 1988 and Poor 2009)	9.6	5.6	12.8	7.9	3.7	11.3
Moving out of poverty (Poor 1988 and Non-poor 2009)	42.1	25.2	55.6	35.4	21.5	46.6
Moving into poverty (Non-poor 1988 and Poor 2009)	7.9	7.5	8.3	6.3	4.7	7.5
Never poor (Non-poor 1988 and Non-poor 2009)	40.4	61.7	23.3	50.4	70.1	34.6

Source: Author's calculation

Figure 7.2: Poverty dynamic patterns between quantitative and qualitative methods



Apart from a comparison analysis of poverty levels, the patterns of poverty dynamics were examined from the income and self-assessment measures and compared using a cross-tabulation table as shown in Table 7.4. The cross-tabulation table is a combined transition matrix that shows the agreements and disagreements between the quantitative and qualitative analyses of poverty dynamics from the same 240 households over the period between 1988 and 2009. The correlations shown through the shaded

diagonal indicate the agreement between the two measures. There was found to be a strong positive relationship between these two approaches for households who had never experienced poverty and those who had moved out of poverty. Almost 90 percent of households classified as being never poor by the income measure were classified as being never poor by the self-perception measure, and about 70 percent of those moving out of poverty also perceived their household poverty status as moving out of poverty. However, according to the diagonal row in Table 7.4, less than half (44 percent) of chronic income poor households reported themselves as being chronic poor. Only 42 percent of households classified as moving into poverty by income measures also perceived themselves as having moved into poverty. Overall, the level of convergence between the two measures was likely to be strong for never poor households while large divergences were evident for chronic poor households.

Table 7.4: Cross tabulation of poverty dynamics patterns between quantitative and qualitative approaches

	(%)	Qualitative approach					
		Chronic poor	Moving out of poverty	Moving into poverty	Never poor	Total	Household numbers
Quantitative approach (Income poverty)	Chronic poor	43.5	21.7	8.7	26.1	100	23
	Moving out of poverty	3.0	71.3	3.0	22.8	100	101
	Moving into poverty	10.5	15.3	42.1	31.6	100	19
	Never poor	4.1	5.2	2.1	88.7	100	97
	Household numbers	19	85	15	121		240

Source: Author's calculation

Some discrepancies in poverty dynamics for households who remained chronically poor and moved into poverty were apparent, which implied a weak relationship. For example, almost one third (32 percent) of the moving into poverty households classified themselves as being never poor by the self-perception measure. This suggests that they perceived their poverty status as being non-poor in both 1988

and 2009, yet they were identified as being income poor in 2009. In addition, about 26 percent of the chronic poor households also classify their poverty status as being never poor which means that they reported their status as being non-poor in both periods, while they were identified as being income poor in both of the studied periods.

Most of the households responded in a similar way that their household was generally living well and they did not consider their poverty status in 2009 as being poor. This finding suggests that there are more dimensions to wealth and well-being than income. Households maybe chronically income poor, but they have other sources of wealth and well-being that makes them perceive that they are not living in poverty. In addition, another explanation for this finding can be the attitude of Thai people. According to the interviews, the most frequent answers from many poor households when they were asked to evaluate their current poverty status included, for example, '*we are doing fine', 'our overall life condition is okay',* and *'although we are not well-off, we are not living in poverty'*. This reflects the optimistic attitude and positive mindset about their lives and is some evidence of the adaptation of rural Thai people, despite the fact that they earned a low income compared to the poverty line and experienced difficulties in their living. The characteristics of households who were classified differently by the two approaches will be identified in the next section.

About 23 percent of the moving out of poverty households classified their poverty dynamic status as never poor. This means that the households perceived their poverty status as being non-poor in both the studied periods, while they were identified as being income poor in the first studied period in 1988. From their perspectives, most of the households who reported their household status as never poor in both studied periods explained that they were living well in 1988 although they only earned a small amount of money. This was partly described in Section 6.4 of Chapter 6. They explained that, in the past, they grew rice mainly for their household consumption so they did not need money to buy food. In addition, they grew several kinds of food in their own garden and obtained it from other natural sources, such as forestry products, without having to spend money. Therefore, despite their lower-than-poverty line income, they were still content with their standard of living as they said *'have enough for living'*, and thus perceived themselves as being non-poor households.

7.4 Characteristics of households

Despite the strong positive relationship between the two approaches stated in the previous section, there were some discrepancies, particularly for households who remained in chronic poverty and moved into poverty as stated in the previous section. Therefore, this part of the analysis further explores the key characteristics of households classified by the two approaches. Two types of households classified differently in the two studied periods are examined, including: (i) income non-poor and self-rated poor households, and (ii) income poor and self-rated non-poor households.

7.4.1 Characteristics of households classified as income non-poor but self-rated as poor

It can be seen from Table 7.5 that households classified as income non-poor but self-perceived as poor had a smaller household size than average. Under the income measure, their small household size could generate high per capita income and thus make them income non-poor households. However, it seems that the self-perception measure of households does not take account of the household size when classifying the poverty dynamic status. Households tended to believe that small households only made a small amount of income. Therefore, despite obtaining above-poverty line income, households with a small household size were likely to perceive themselves as being poor. These households also exhibited a significantly higher dependency ratio than the sample averages, which was mainly attributed to the increasing proportion of elderly members. Normally, high numbers of elderly people in households suggested a significant burden of expenditure, particularly on healthcare, while most elderly family members could normally not actively work and earn money. Therefore, households with a high number of elderly dependents tended to self-perceive their household status as experiencing financial difficulties, and consequently, perceived themselves as being poor.

In addition, these households diversified their livelihood strategies from being farmers into non-farm waged labourers accounting for almost half of the total number of working members. Non-agricultural wage income also contributed a large part (about 85 percent) of the total household income. People perceived that engaging in non-

agricultural casual wage employment was relatively less secure compared to regular salaried employment. Thus, the variability of income from casual waged labour made these households feel vulnerable to poverty. In addition, a significant number of households had members who experienced shocks from health problem as a result of illness and accidents. A higher percentage of these households were facing with health shocks compared to the total households. In many cases, it appeared that health shocks might not have had a significant adverse effect on the household income, particularly if such shocks did not affect key income earners. Therefore, households were not living in poverty according to income poverty measures. However, households viewed the occurrence of health shocks to their family members as making them vulnerable and saw them as negative impacts that could generate a financial burden, which was why they perceived themselves as being poor. Overall, households classified as being income non-poor, but self-reported themselves as being poor, were likely to have a small household size, high proportion of elderly family members, non-agricultural day wage earnings and effects from health shocks.

Table 7.5: Characteristics of households classified as income non-poor and self-rated as poor

	1988	Mean	2009	Mean
Demographics				
Age of household head (year)	54	53	59	62
Female-headed households (% of households)	21	14	50	35
Household size (persons)	5.1	5.2	4.4	4.5
Share of household members (%)				
0-14	15	19	12	14
15-59	75	69	42	57
60+	10	12	46	29
Dependency ratio (%)	46	50	97	70
Occupations of working member (%)				
Farmer	78	81	27	42
Agricultural waged labourer	5	6	9	6
Non-agricultural waged labourer	11	8	47	32
Salaried worker	2	3	0	10
Self-employed	3	2	8	6
Unemployed	1	0	9	4
Land				
Farm size (ha)	5.4	4.0	3.2	3.2
Rice cultivated area (ha)	4.9	4.4	4.9	5.3
Irrigated area (% of area)	29	44	31	45
Rice yield (ton/ha)	1.9	2.3	2.0	2.4
Landless (% of households)	0	0	33	15
Shocks experienced				
(% of households)				
Death of household head	21	22	17	22
Death of household members	7	12	8	12
Illness	36	25	42	25
Flood	7	10	8	10
Drought	14	20	25	20
Crop disease	14	11	8	11
Migrant of household members	14	18	21	56
Income composition (%)				
Farm income	70	88	14	45
Rice	50	67	2	30
Non-rice and livestock	8	15	8	15
Agricultural wage	12	5	4	8
Renting and earning interest	0	1	0	2
Non-farm income	30	12	86	55
Non-agricultural wage	20	8	62	34
Regular salary	4	2	7	10
Self-employment	1	2	8	8
Remittances	5	0	6	2
Others	0	0	3	1

7.4.2 Characteristics of households classified as income poor and self-rated as non-poor

Households classified as being income poor but self-perceived as being non-poor had significantly larger size of household compared to the average level of all the sample households. It appears that households with a large family size were likely to become income poor but self-perceived as being non-poor, suggesting that the self-assessed poverty method does not take household size into account when classifying poverty dynamics. In terms of livelihood strategies, most households participated in the farm sector and most of the working members were farmers. Therefore, it seems that some income poor farm households perceived themselves as being relatively well-off. This indicates that they could not efficiently translate all of their agricultural production and assets into income, while they also needed to share their income among many household members. In addition, these farm households mainly produced and utilised rice and other crops for their own consumption within the household, which also means that they did not need money to purchase food. Therefore, even though their income was lower than the poverty line, they still perceived themselves as being non-poor households. These households also experienced shocks from the death of household heads and natural disasters, and such shocks had a negative effect on household income. However, it is likely that the shocks did not significantly affect people's perception of their poverty status.

Table 7.6: Characteristics of households as income poor and self-rated non-poor

	1988	Mean	2009	Mean
Demographics				
Age of household head (year)	52	53	71	62
Female-headed households (% of households)	16	14	50	35
Household size (persons)	5.2	5.2	5.5	4.5
Share of household members (%)				
0-14	25	19	20	14
15-59	70	69	68	57
60+	5	12	22	29
Dependency ratio (%)	55	50	63	70
Occupations of working member (%)				
Farmer	70	81	65	42
Agricultural waged labourer	8	6	3	6
Non-agricultural waged labourer	16	8	22	32
Salaried worker	2	3	6	10
Self-employed	2	2	2	6
Unemployed	2	0	2	4
Land				
Farm size (ha)	2.9	4.0	2.8	3.2
Rice cultivated area (ha)	2.3	4.4	2.2	5.3
Irrigated area (% of area)	27	44	27	45
Rice yield (ton/ha)	2.0	2.3	1.6	2.4
Landless (% of households)	0	0	6	15
Shocks experienced				
(% of households)				
Death of household head	16	22	35	22
Death of household members	19	12	6	12
Illness	14	25	16	25
Flood	11	10	6	10
Drought	27	20	18	20
Crop disease	11	11	0	11
Migrant of household members	27	18	35	56
Income composition (%)				
Farm income	86	88	60	45
Rice	63	67	20	30
Non-rice and livestock	14	15	32	15
Agricultural wage	9	5	8	8
Renting and earning interest	0	1	0	2
Non-farm income	14	12	40	55
Non-agricultural wage	9	8	25	34
Regular salary	1	2	0	10
Self-employment	4	2	4	8
Remittances	0	0	11	2
Others	0	0	0	1

Overall, the comparative analysis from this research indicates a significant positive correlation of poverty levels between income and self-assessment measures. The strength of association between the two approaches was found to be greater in non-poor households than in poorer households, which suggests that relatively higher proportions of non-income poor households perceived their poverty status as being non-poor than income poor households who reported themselves as being income poor.

Despite strong positive relationships, there appeared to be a number of discrepancies between the poverty level and poverty dynamics of the quantitative and qualitative approaches, and there could be several reasons for this, the first of which is the difference in poverty conception. Different approaches in conceptualising poverty can lead to a different measurement and identification of people as being poor and non-poor (Laderchi, 1997, Laderchi et al., 2003). This is also consistent with comparison studies of poverty assessment between income poverty and a subjective approach to poverty that refers to people's own assessment of their poverty status. Several studies of poverty in developing countries have demonstrated that subjective self-rated poverty is often concerned with a broader dimension than income poverty (Jodha, 1998, Rojas, 2008, Caizhen, 2010). A number of recent studies also argued that asset-based measures can be a good measure of long-term poverty and better reflect households' living conditions compared to income measurement (Carter and Barrett, 2006). Different poverty aspects from local people's perception in this research were already discussed in Chapter 6 Section 6.3.1. It appears that a self-rated assessment, which is defined in terms of people's evaluation of their poverty status, captures a broader view of poverty and well-being that include assets, income, livelihood strategies, and health and life satisfaction, while quantitative measures only focus on the single dimension of income. Since the two different approaches focus on different dimensions of poverty, discrepancies could exist when using different poverty concepts and approaches.

Secondly, characteristics of households classified differently between the two approaches shows that the self-assessed poverty method does not take into account household size in poverty dynamic classification, as described in the previous section. This somewhat suggests that a quantitative assessment is based on per capita income, while a qualitative assessment is based on the level of overall household income.

Smaller households engaging in livelihood activities characterised by low and unsecured earning, such as non-agricultural wage employment, are more likely to become income non-poor and self-rate themselves as being poor households. However, households with a large family size are likely to be self-perceived as non-poor, but income poor. Davis (2009) also considered a change in household size as the key plausible reason for the disagreement of poverty transition between a quantitative expenditure-based assessment method and life history interviews for households in rural Bangladesh. He explained that reductions in household size lead to loss in economies of scale in household expenditure, which is not captured by per capita expenditure.

Thirdly, discrepancies in poverty levels could be explained by differences in the reference periods of study. Income poverty was measured using household surveys conducted in two specific reference years, namely, 1988 and 2009, while self-rated poverty was based on retrospective interviews over decades of historical events between the periods of 1988 and 2009. Households were interviewed to self-evaluate their poverty status today in 2009 and in the first study periods in 1988 in order to compare changes in poverty between the two periods of study. It may be that some respondents could not clearly remember what had happened to their poverty status, which would lead to errors when recalling dates and events, despite the fact that the researcher made every attempt to minimise this recall error by using the years of births, marriages, or deaths of their household members as a timescale benchmark and developing a chronological template to help to jog their memories.

Fourthly, while income poverty was measured on an absolute poverty basis, a self-rated poverty assessment could be driven by relative poverty, since some households evaluated their poverty status by comparing themselves with other households in the village. Therefore, the measure of poverty by a self-assessment can be different from that of an income poverty measurement.

Lastly, the discrepancies between the two approaches could be the result of the close proximity of households' income to the poverty line. The data from the household survey suggests that a large number of households were non-poor (or poor) according to the income method, but they were only a little above (or below) the poverty line. About

30 percent of the households that experienced a mismatch between quantitative and qualitative methods in both studied periods had incomes 20 percent below and above the poverty line.

7.5 Key factors determining poverty dynamics

Baulch (2011) indicates that there is no single commonly-adopted approach for modelling poverty dynamics. Thus, it is worth triangulating the results from different modelling approaches to understand each of their strengths and weaknesses to obtain the best practice to employ for poverty dynamic research. In this section, the key factors associated with the four categories of poverty dynamics are compared between the two approaches.

7.5.1 Key factors of remaining in chronic poverty

The comparison of the findings obtained from the panel survey and the self-assessment method illustrates that both methods cover similar groups of the key factors of chronic poverty with similar relative importance. This implies that the results somewhat confirm and supplement each other. Both the quantitative and qualitative methods found low initial levels of household assets to be the most important reasons why households remained in chronic poverty. Their remaining in chronic poverty reflected that households experienced low levels of assets in the initial period, which made them unable to accumulate new assets and generate more income or enhance the returns on the assets they possessed over time in order to move out of chronic poverty. Some recent studies have also attempted to examine the relationship between asset accumulation and persistent poverty using an asset-based approach (Carter and Barrett, 2006). Their work has developed an asset poverty threshold that indicates the amount of assets households need to acquire in order to move out of poverty.

Higher dependency rates within households were also clearly identified as being key factors in both methods. In addition, the two methods also report that shock from the death of household heads is one of crucial determinants. Therefore, following the two approaches, chronically poor households were predominantly characterised by low asset ownership, high dependency, and shocks from the death of the household head.

While the quantitative analysis was able to simultaneously identify many asset factors (e.g. education, lands, rice yields, shares of working members), mainly due to its multivariate nature in factor identification compared to the qualitative method, the qualitative assessment only focused on the lack of land assets and financial capital as key asset factors. However, the qualitative method tended to add key issues and additional insights, including contextual factors and underlying causal processes that helped to explain why households remained in chronic poverty. This is due to the fact that the quantitative analysis was based on a household survey conducted in two different years, 1988 and 2009, while the self-rated qualitative assessment was based on retrospective interviews of past events over the entire period between 1988 and 2009, which enabled the capturing of additional factors and underlying causal processes from a detailed account of life events and the number of shocks that occurred during the studied period.

For example, the impact of ill health problems caused some household members, particularly the elderly, to be unable to work effectively or even continue working. Not only did they mention their inability to work, but in most cases, it was elderly household members who experienced health problems and they had nobody to take care of them. They had been left alone by their children or spouse who had migrated to other cities to set up a new household or look for job opportunities. The qualitative interviews also identified and supplemented the importance of working-age members' migration to changing the composition of the household demographics as another causal factor to explain why households remained in chronic poverty. This structural process of growing older, experiencing chronic ill health, and living alone in the family mainly due to children's migration, was not observed in the panel survey. Moreover, these elderly and left-alone people generally viewed their household condition as living in poverty. This suggests that, while the quantitative analysis identified households according to income poverty concepts, the people themselves in this case defined poverty in a broader concept, including many complex characteristics and feelings such as living with poor health, feelings of stress, depression, powerlessness and unworthiness as a result of chronic ill health and being left alone as described in Section 6.3.1 of Chapter 6. Different concepts and methods of measuring poverty could also lead to different

identification of households as being poor and, in turn, suggest different factors to determine poverty dynamics.

7.5.2 Key factors to explain moving out of poverty

The results from the panel survey and self-assessment method identified that income diversification from farming to non-farm sources become the most important factor to explain the move out of poverty. According to people's perception, the qualitative interviews also included positive behaviour and the value of being sufficient, thrifty in spending money and working hard as another key factor associated with moving out of poverty. These behavioural factors are difficult to measure and were not available in the quantitative analysis.

7.5.3 Key factors to explain moving into poverty

When comparing the findings from both the quantitative and qualitative methods, it was clearly observed that the depletion of household assets, particularly land assets, was the most important factor to explain why non-poor households moved into poverty over the period. While the findings of the quantitative analysis revealed the importance of other key factors, including a female household head and reliance on single income-generating activities from farming, these seem hardly to capture the changing variables. According to the results shown in Chapter 5, apart from change of the household head from male to female, it seems that all other change variables in the regression model did not have a statistical significance for moving into poverty. However, the extensive qualitative method identified the fact that the processes of unprotected risk and demographic change underlaid this poverty transition. According to the interviews, people perceived that ill health shocks of primary income earners and higher dependency resulting from the migration trend of working-age members were key factors associated with moving households into poverty. Engaging in negative behavior, such as excessive alcohol consumption, smoking and addiction to gambling also influenced households to fall into poverty.

7.5.4 Key factors to explain never poor

While the quantitative analysis provided the general descriptive characteristics of never poor households as being those who own the highest value of assets and have the least possible dependency ratio, the qualitative interviews supplemented this with underlying factors of non-farm income diversification and positive behaviour, which people considered to be key determinants of maintaining themselves as never poor households.

Table 7.7: Summary of key factors determining poverty dynamics

Poverty dynamic groups	Quantitative approach	Qualitative approach
Chronic poor	<u>Assets</u> • lowest mean value of assets in the initial period (including working members, farm size, cultivated area, loans) <u>Demographics</u> • highest dependency ratio (elderly) <u>Employment</u> • employed in agricultural sector	<u>Assets</u> • sold all land and became landless <u>Demographics</u> • children grew up and migrated to other areas without sending back remittances • parents getting older, not able to work and no children to help with the farm work
Moving out of poverty	<u>Employment</u> • engaged more in non-farm employment activities, specifically regular salaried jobs and remittances. <u>Assets</u> • asset accumulation (including educational level, rice yields, irrigated areas)	<u>Employment</u> • diversified income sources to non-farm employment for a regular income (e.g. salaried jobs, waged labourers, self-employed businesses) <u>Demographics</u> • lower dependency rate due to increase in number of working members, reflecting the effect of children growing-up, starting work <u>Behaviour</u> • becoming self-sufficient, thrifty and working hard

Poverty dynamic groups	Quantitative approach	Qualitative approach
Moving into poverty	<u>Assets</u> • asset depletion (including cultivated areas and rice yields) <u>Demographics</u> • highest share of female heads and most increase in household heads' age • employed in agricultural sector	<u>Assets</u> • asset depletion (land) <u>Demographics</u> • higher dependency rate due to a decrease in the number of earners due to migration to other cities, and/or increase in the number of dependents <u>Shocks</u> • ill-health • death of household head and natural disasters <u>Behaviour</u> • excessive alcohol consumption, smoking, and gambling addiction
Never poor	<u>Assets</u> • highest mean value assets in both periods (including average years of schooling, farm size, cultivated areas, irrigated areas, rice yields, agricultural assets, livestock and amount of loans) <u>Demographics</u> • smallest household size and lowest dependency ratio	<u>Assets</u> • education <u>Employment</u> • diversified income source into both non-rice farming and non-farm employment (including growing non-rice crops, working in non-farm sectors) <u>Behaviour</u> • working hard, being thrifty, and saving

Source: Summarised from Chapters 4, 5 and 6

7.6 Case studies of differences between quantitative and qualitative results

Previous sections clearly demonstrated that there were a number of differences between the results of the quantitative and qualitative analyses methods. Selected case studies of households from the in-depth life history interviews are presented below to further supplement to those findings.

7.6.1 Case 1 shows the difference between the results of the quantitative assessment of a household as being "chronically poor" and their self-perception of being "never poor".

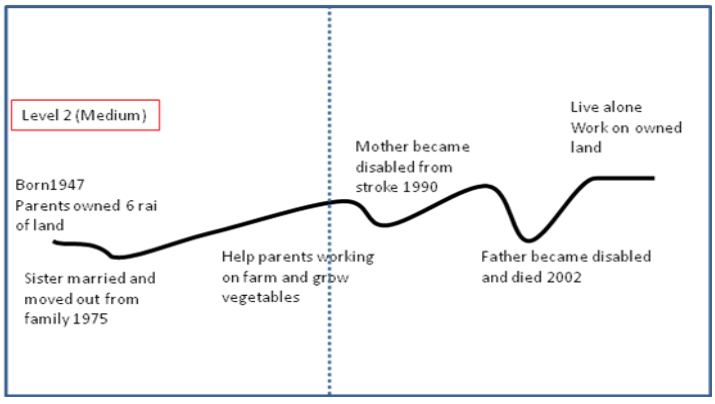
Case 1 refers to a 63 year-old woman who is unmarried and currently lives alone. In 1988, she lived with her parents. Her parents worked as farmers on their own land, which she and her sister later inherited. She said that her household lived well and was not considered to be poor twenty years ago. According to her, the key supportive reason was because her family grew rice and other home-grown vegetables, mainly for their own consumption; thus, they did not need a large amount of money for their daily lives. Moreover, despite her parents being uneducated, they were able to support her and her sister to finish primary school. After marrying in 1975, her sister moved to Bangkok with her husband and son. Their parents died six years ago. In 2009, she lived alone and worked on her own farm of about 6 rais (0.96 hectares). Moreover, she also grew vegetables for sale at the weekend village market, earning 100-200 baht per week, and occasionally worked as an agricultural waged labourer on others' farms. She also received the 500 baht monthly allowance the government provided for people aged over 60. Although she only made small amounts of money from farming and the monthly government allowance, she did not have to share her income or take care of her parents and other family members. What she earned was only for her own living. Also, she had no debts. Although she owned very little and sometimes had insufficient rice and other food for three meals a day, she said she was quite satisfied with her overall life and what she was doing, and also felt she had enough. She emphasised the significance of having good health and being hardworking, enduring and thrifty. As long as she was conscientious and tolerated the difficulties in life, she believed she would be able to find ways to continue to live and make her life better. For all these reasons, she believed that

her current life had improved compared to the household's living condition in 1988 and considered herself to be non-poor.

This case study suggests that some households within the income poor perceived themselves as never having experienced poverty and were satisfied with their lives. This is because the qualitative interview method was largely based on a subjective assessment of the person's current condition, which provided multidimensional perspectives, while the quantitative survey was based solely on income measurement. People's subjective assessment obtained from the interviews included life satisfaction influenced by positive attitudes to the key domains of life, such as self, health, job and family. Rojas (2008) studied a subjective well-being approach on poverty in Mexico and found discrepancies between income poverty and experienced poverty which captured more complexities of the domains of human life. He found seven domains of life related to life satisfaction, namely, self, health, economic, family, friends, job and community.

Moreover, in this case, the difference between quantitative and qualitative methods was also due to the fact that the household income was close to the poverty line as described in Section 7.4. When income levels are close to the poverty line, the per capita income measure seems not to be sufficient and effective in determining the poverty status. The per capita income measure of poverty suggested that this household was "chronically poor" while the perception assessment labelled it as "never poor".

Case 1: The quantitative method indicated this case was a chronically poor household while the qualitative method labelled it as being never poor.
Cases where income-based poverty did not capture satisfaction in the domains of life and the household income level was close to the poverty line



Case 1: Household's information

	1988	2009
Per capita income (US$ per month)	210	460
Poverty line	233	507
Land owned (hectares)	0.96	0.96

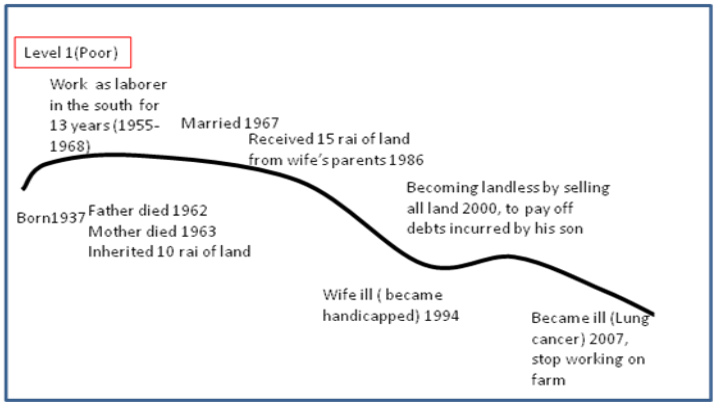
7.6.2 Case 2 illustrates the difference between a quantitative assessment of a household as "moving out of poverty" compared to the household's self-perception as being "chronically poor".

Case 2 describes the experience of a 74 year-old man who suffers from lung cancer lives with his 63 year-old disabled wife. They have three children, but now live with their youngest daughter and her husband who works as day waged labourer in a factory. After marrying in 1967, he had worked on the farm he inherited from his parents. Twelve years later in 1979, they also received additional land from his wife's parents, so that they owned about 2.4 hectares of land in all. In 1988, the eldest daughter married and moved out to live in another province with her own family. At that time, he said he considered his family as being poor since they were faced with financial difficulties. He was the only income earner for the whole family. In 1995, his wife became disabled and she was unable to walk. He only earned income from one source, i.e. farming. Most expenditure related to his wife's medical treatment. According to the life history, the household's poverty status declined when his wife suffered from health problems, which required expensive medication, and after that, the household remained in poverty. In 1999, his second daughter married and his son-in-law moved in. They both worked as day labourers on a construction site earning about 120 baht per day. In 2000, his youngest son, who had left his parents after marrying and moved to another province with his wife, created an amount of debt. Therefore, the household head decided to sell all the land to pay off the debts incurred by his son and now the household was landless. In 2007, the man became ill and found that he had lung cancer, and due to this chronic illness, he was unable to work anymore. The only source of income of this household was the government's monthly allowance for the elderly and disabled (500 baht per month) and the non-farm day wage earnings occasionally received from his daughter and son-in-law.

This case suggests that some qualitative assessments were not detected in the income-based quantitative analysis. The chronic ill health problems and becoming landless were captured by the qualitative assessment. The qualitative interview was based on a subjective assessment influenced by the perception of possible anticipated vulnerability in the future, such as the impact of illness or disability. The qualitative

assessment accounted for the fact that the household head had suffered from chronic illness (lung cancer) and that his wife had been disabled for more than ten years. Moreover, this case also shows that income-based assessment is not a good indicator of households' assets (in this case land asset). While they were classified as income non-poor in 2009, the household had sold all its land to pay off a debt and has become landless.

Case 2: The quantitative method indicated that this case was escaping poverty while the qualitative method suggested it was chronic poor.
Cases where the income-based poverty measurement could not reflect households' assets and illness problems



Case 2: Household's information

	1988	2009
Per capita income (US$ per month)	148	861
Poverty line	300	546
Land owned (hectares)	2.4	0.5

7.7 Conclusion

Few empirical studies contribute to an understanding of the relationship between the recording of household poverty dynamics by means of income poverty measures from the quantitative approach and people's own subjective perception of poverty from the qualitative approach. Most studies of poverty trends and poverty dynamics focus on income or expenditure measures. Therefore, this research aims to bridge this gap in the literature by making a comparative analysis of the quantitative approach using household panel survey data collected in a two-waved period and the qualitative approach based on retrospective information from a self-rated assessment and in-depth life history interviews. This helps to comprehend the complementarities and contrasts

between the two different methodological approaches. This chapter analysed and triangulated the findings of poverty levels, poverty movement patterns and the key factors determining poverty dynamics from the qualitative self assessment to determine whether they accorded with findings from the panel survey or differed from them.

The comparison analysis from this research indicates a strong positive correlation of the poverty level between income and self-assessment measures. The strength of the association between these two approaches was found to be greater in non-poor households than in poorer households. The patterns of poverty dynamics between income-based and self-perception measures were also evaluated. Both approaches demonstrated similar patterns of poverty dynamics in which substantial mobility across poverty categories was observed.

In addition, the correlation between the income method and people's self-perception assessment of poverty dynamics from the cross-tabulation table suggested that there was a strong positive relationship between these two approaches for households who had never been in poverty, while there were huge divergences for chronically poor households. The differences in poverty levels and poverty dynamics could be attributed to several plausible factors, the first of which is that a qualitative self assessment captures a broader concept of poverty than quantitative income-based measures. Secondly, the qualitative method does not explicitly take account of household size when classifying poverty. Thirdly, errors in recall or slight differences in the time period over which the quantitative survey was conducted and the retrospective interview period can explain the discrepancies. Fourthly, while income poverty was measured based on absolute poverty, the self-rated poverty assessment could have been driven by relative poverty. Lastly, the discrepancies between the two approaches could be the result of the close proximity of households' income to the poverty line.

This chapter also triangulated the findings from the panel survey with those from the self-assessment method, and it was apparent that both methods covered a similar group of key factors that determined chronic poverty with similar relative importance. This implies that the results somewhat confirm and supplement each other.

Both the quantitative and qualitative results identified similar structural factors, which included asset ownership, as being the key factors that influence poverty dynamics. The activities in which people are engaged or the sectors of employment are also important factors of moving households out of poverty, with more household members working in non-agricultural activities, specifically earning a regular salary, and remittances. The qualitative interviews also suggested additional important factors to explain moving out of poverty. The findings revealed that households who were able to escape poverty were mainly at the stage in their lives when their children had grown up and entered the workforce and there were fewer dependent members. Households able to move out of poverty also emphasised the significance of household members being thrifty and hard working as the key factor of escaping from poverty.

The results from the household survey show that the factors that led households to move into poverty included fewer cultivated areas and rice yields, as well as household demographics factors, particularly increasing proportion of elderly members in the household and a reduction in the number of earners. The qualitative interviews also confirmed this finding. Moreover, the life history interviews also provided additional insights into the context of people's lives. Apart from the structural or asset factors and the lifecycle factors, people perceived that shocks and crises also played an important role in moving their households into poverty. A more disaggregated breakdown illustrated the importance of illness as the most important factor, while the death of the household head and shocks related to natural disasters, such as flooding and drought, came next in order of importance. According to the interviews, social norms of misbehaviour and having negative behaviour, such as excessive alcohol drinking, smoking and addiction to gambling were also identified as being key factors of moving into poverty.

Overall, the estimated results from the quantitative analysis of the key determinants of each dynamic category of poverty in Chapter 5 provided a broad picture, and its multivariate nature enabled many factors to be considered. However, it appears that the quantitative analysis was only successful in identifying factors associated with chronic poverty following the stronger statistical significance compared to poverty transitions. Only a few factors could be said to significantly determine

poverty transitions, including moving into and out of poverty. The quantitative analysis tended to omit several key factors, such as various livelihood strategies, shocks, positive or negative behaviour and values, as well as underlying processes that were likely to impact households' poverty status over the period, but were unable to be observed from the survey questionnaire due to its limited nature. It is due partly to the fact that the survey was conducted in two periods, therefore, the quantitative analysis were mainly based on two datasets, the initial level of key variables in 1988 and the level in 2009. However, self-rated assessment and life history interviews were based on retrospective interviews over a decade of household events between 1988 and 2009 which provided in-depth information and revealed several key events that happened between the survey period and were not appeared in the survey questionnaire.

In Chapter 6, the findings from the qualitative methods also added these key issues and provided additional insights, including contextual factors and the underlying causal processes to explain each group of poverty dynamics. For example, the qualitative interviews identified and supplemented the importance of working-age members' migration to changing households' demographic composition as another causal factor to explain why household remained in chronic poverty. In addition, qualitative interviews according to people's own perception also included positive behaviour and the value of being self-sufficient, thrifty in spending money and working hard as other key factors associated with moving out of poverty, and it is difficult to explicitly measure this behaviour in a panel survey. All of which, this study of Thailand case has provided evidence that combining both approaches in studying poverty dynamics complements each other and enables a better understanding of the relevant factors than using either approach separately.

CHAPTER 8

Conclusions and policy implications

8.1 Introduction

The remarkable success in reducing poverty rates associated with structural transformation raises the key question of this research, namely, 'what are the factors that explain the poverty dynamics in rural Thailand over the past two decades?' Although the number of poverty studies on Thailand has increased over the past decades, they have all generally discussed the overall trends of poverty based on poverty profiles and descriptive analyses of macro-level data. In order to understand the poverty dynamics of how people move into and out of poverty over time, panel or longitudinal studies that track the same households are an important means to identify the patterns and key factors associated with poverty dynamics. However, the number of such studies for Thailand is limited due to the scarcity of panel data.

To provide a broader understanding of the nature of poverty and the poverty dynamics of rural Thailand, this study is based on a survey of a panel of 240 households that were originally interviewed in 1988, and were followed and interviewed again by the author in 2009 for the purpose of this longitudinal study of the Northeast and Central region of Thailand. Lessons learnt from a comparative mixed-method study in rural Thailand can provide a better insight into how the changing patterns of the main economic, social and demographic characteristics of rural households have influenced the process of poverty dynamics over time. Policy implications derived from this empirical study are expected to help to strengthen the poverty reduction efforts of Thailand, as well as those of other developing countries.

Overall, the thesis makes three major contributions to existing literature, including theoretical, empirical and methodological knowledge. Firstly, it provides the first empirical evidence for analysing poverty dynamics in Thailand by conducting a panel survey in 1988 and 2009. This study makes an attempt to identify the extent to which the major structural shifts in rural households contributed to the impressive

poverty reduction in Thailand. Secondly, the study adds more general micro-level evidence to the body of literature on the nature of poverty dynamics among rural households and the key factors underlying it. Thirdly, the study adopts the combination of quantitative and qualitative approaches to better enhance the understanding of poverty dynamics. The findings of this analysis help to provide a distinctive contribution to the mixing of quantitative and qualitative methods, particularly in the study of poverty dynamics.

The main contribution made by the empirical findings of the study will firstly be summarised in the remainder of this chapter, and this will be followed by policy implications.

8.2 Major contributions of the key findings of the study

8.2.1 Understanding poverty dynamics in rural Thailand

Numerous studies of Thailand's poverty generally discuss the overall patterns and trends of poverty based on poverty profiles and descriptive analyses of cross-sectional data collected at any one point in time (see for example World Bank, 1996, World Bank, 2001a, Deolalikar, 2002b, NESDB, 2011). While poverty profiles can provide a good overview in terms of identifying the poor and their characteristics, existing literature on poverty studies in Thailand are insufficiently effective to explain why people escape from poverty or remain chronically poor over time. This study is the first attempt to provide an in-depth analysis of the long-term mechanisms of poverty dynamics at the household level via a longitudinal analysis of poverty in the rural villages of Thailand by re-interviewing the same households in 1988 and 2009. It does so by identifying the dynamic patterns of poverty and examining the factors and processes that underlie poverty dynamics or how households move into and out of poverty. The findings from the study provide a better understanding of how a successful developing country like Thailand was able to experience a reduction in poverty by following a developmental process and making fundamental structural changes in the rural economy, as well as identifying the factors that significantly affected the dynamics of poverty.

Thailand has made remarkable progress in alleviating poverty over the past two decades. Apart from its economic expansion and successful poverty reduction, Thailand has also experienced an economic and social structural transformation, not only in the urban but also in rural areas and this transition has brought a profound challenge. Thailand's, development process in the past has mainly emphasised economic growth orientation. Particularly the period 1980-1996, prior to the economic crisis, was a period of dramatic change and significant development for the Thai economy when it experienced rapid economic expansion and structural adjustment (Dixon, 1999). Industrialisation and urbanisation became more apparent, and the manufacturing sector shared an increasingly large part of the overall production with the rapid expansion of urban areas (Warr, 2005). While the Thai economy was known to be agriculture-based with a large proportion of the labour force engaged in the agricultural sector, especially in rural areas, the increasing importance of the industrial sector as the key engine of economic growth diminished the importance of the agricultural sector to the overall economy. Although the majority of the rural population remained in agriculture, the sector only generated a small share of production and income; thus, these rural farmers have remained the poorest household group in the country. This shows that the benefits of outstanding economic growth had not been proportionately distributed to rural farm households, particularly to those who are poor.

The process of development toward industrialisation and urbanisation required the adaptation of household livelihoods in several ways, mainly because of the change in the economic activities of household members. Industrialisation brought many employment opportunities for rural villages, and many rural farm households increasingly diversified their livelihood strategies from farming to non-farm activities, both within and outside rural communities. The availability of lucrative non-farm employment, particularly in urban and industrialised areas, offered a relatively higher and more secure income compared to the agricultural sector. However, this has also led to a growing concern about the increase in income disparity between rural and urban areas (Parnwell and Arghiros, 1996, Krongkaew, 1993). A considerable number of rural labourers decided to migrate to urban areas, either to work or study higher educational levels. The migration of these rural young working members inevitably brought about

significant social changes and structural shifts in the rural livelihood system in Thailand, such as changes in the demographic characteristics and the relationships within rural households.

In Thailand, the mobility of rural labourers from farming to non-farm sectors has been apparent (Isvilanonda et al., 2000, Rigg, 2003, Haggblade et al., 2007). However, how far such structural shifts and dynamism in the rural livelihood system have contributed to Thailand's poverty dynamics has remained unclear. Therefore, this study has attempted to identify the extent to which the major structural shifts in rural households have contributed to the impressive poverty reduction in Thailand and provide further evidence of why different poverty dynamic groups of rural households have diverse abilities to cope with the country's structural changes.

The experience of chronically poor households is similar in both the Central and Northeast regions of Thailand. The disadvantaged position of this particular group is evident in terms of having the lowest value of asset holdings, such as number of earner, education of working members largely to primary level, land size, cultivated areas, and physical agricultural assets. The economic activities in which the chronic poor are engaged have also changed significantly over time. Of particular importance is the declining dependence on rice farming on their owned land as the single source of income for the chronically poor category. This is because these households generally own a smaller land size and become landless in some cases. There has been a significant increase in the share of income of non-agricultural day waged labourers, especially for landless poor households. A low initial level of asset base, a small number of working members and an increased number of elderly members within a household have caused chronically poor households to experience a very slow pace of progress in accumulating assets and restricted them to participating in low-return and low-skilled livelihood activities in the non-agricultural sector, such as construction labourers and day waged workers in factories. These kinds of jobs cause them to experience unstable and unsecured income levels where the households are no longer able to meet their minimal subsistence needs and thus remaining in chronic poverty. A number of chronic poor, particularly those in rural areas who are likely to be less well-educated, tend to receive less benefit from the development of the non-farm sector than those who are moving out

of poverty and never poor households. Evidence from this study also shows that the structural change and development process has led to large disparities in asset holdings, particularly land, rice yields, and agricultural assets, among the chronic poor and never poor groups.

In addition, an increase in the out-migration of rural farm labourers has led to a decline in the number of young working members and a labour shortage in rural areas. A higher dependency ratio due to the rising proportion of elderly members was one of key reasons for households to remain in chronic poverty. Not only did elderly household members tend to be less able to work, especially on the farm, and earned less income, they were also face with ill health, which led to considerable expenditure on healthcare. It was seen from the results of the qualitative interviews that these elderly and left-alone people also viewed their household condition as remaining in poverty, and this reflects people perception of the broader concepts of poverty. Poverty is not solely income poverty but also includes a complexity of several characteristics and social factors, including depression, powerlessness, and a feeling of being unworthy as a result of chronic ill health and being left alone. This finding argues that family relationship is considered as another important aspect of poverty especially for elderly people to be cared and supported both financially and mentally by their children.

As for those moving out of poverty, this household category experienced a significant increase in the accumulation of assets, including the number of working members completing secondary and university level education, cultivated and irrigated areas, and physical agricultural assets. The study also confirms the importance of multiple exit routes out of poverty via the diversification of economic activities. Nevertheless, there are significant differences between the livelihood strategies adopted by households who managed to move out of poverty in the two different regions. It appears that the different nature of livelihood diversification within each particular region and geographical area is important. While non-agricultural employment activities, specifically salaried works, self-employment and remittances, are the key pathway out of poverty for rural poor households in the Northeast region, where environmental conditions are unfavourable for agricultural cultivation, agricultural

activities remained the most important way to move households out of poverty in the Central region.

The findings from the Central region show that, although more households experienced occupational diversification from the agricultural sector to the non-agricultural sector, rice farmers and agricultural waged labour remained the dominant occupation of households. The influence of the green revolution through the enhancement of modern agricultural practices has brought about significant changes in the agricultural sector (Otsuka et al., 1992, Isvilanonda et al., 2000). This study also revealed a similar situation. The pattern of agricultural production has changed to be intensively commercial-based. There were also increases in land transfers following the development of the land rental market in the region. The renting out of land and the use of waged labourers has grown in the region. The adoption of modern rice varieties and labour-saving technology has enabled farmers to produce higher cropping intensity from a single crop to two or three crops every year, particularly those in the irrigated and flood-prone areas of the Central region, where water resources are favourable. As a result, poor farm households, especially in these favourable production areas of the Central region, earned a higher income from selling rice, purchased additional land, and eventually were able to move themselves out of poverty over the studied period.

The moving out of poverty households in the Northeast region had a somewhat different experience from households in the Central plain. Due to a relatively unfavourable production environment with an irregular rainfall pattern and a scarce water supply for cultivation compared to the Central region, households in the rain-fed and drought-prone areas in the Northeast region were mainly able to grow a single rice crop with low-yielding traditional rice varieties in the wet season, and were forced to leave their lands fallow for the rest of the year. Low rice yields and high production costs diminished the farm profits, and consequently, caused some households in the Northeast region to suffer substantial losses from rice and crop farming. These households had to sell some of their land to pay back the debts they had incurred. Therefore, the average household in the Northeast region owned a smaller size of land than its counterpart in the Central region. Having suffered significant losses on farming, many working members had to diversify their livelihood activities from depending only

on the agricultural sector to engage more in the non-agricultural sector, both within and outside their rural communities. A relatively higher wage rate in non-agricultural employment activities, both in rural and urban areas, induced more farm labourers, especially young members, to reallocate or migrate, and this led to substantial decline in the agricultural labour force. Full-time farming is no longer common feature of rural households in the Northeast region, and this trend is generally supported by findings in other South East Asian countries (Rigg, 2006).

As for the success stories of moving out of poverty households, they had received a considerably increased contribution of non-farm income over the period, which was mainly due to the considerable expansion of secure and stable income sources, including regular salaried employment, self-employed businesses, and remittances. An increase in the average educational level of young working members, particularly related to secondary school and university education, provided greater opportunities for these households to participate in better income-generating occupational activities, and this opened up the pathway out of poverty for rural poor households. Demographic factors were reported in the qualitative interviews as being one of the most important factors for rural households to escape from poverty. They felt that their households had become well-off compared to twenty two years ago, since their children had grown up, finished school, entered the work force and were earning an income. Some also received remittances from their children who migrated and sent money home to help to support the family. Another important factor cited by households as contributing to their moving out of poverty was positive behaviour and the value of being content with sufficient, thrifty in spending money, and working hard.

Unlike the moving out of poverty households, the income source of the moving into poverty category primarily depended on farming, both rice and other non-rice crops. More than half of these households still worked on farms. However, it appears that non-poor households that moved into poverty were faced with vulnerability because of the considerable depletion of rice-cultivation areas, irrigated areas and rice yields. In addition, demographics were unfavourable for this household group, mainly due to an increase in the proportion of elderly members and a decline in the proportion of working members in the household. Moving into poverty households also had the highest

proportion of female heads, which suggests that changing the head of the household from male to female could lead to vulnerability and poverty. The majority of female heads of rural Thai households were widows, who had normally become head at a very old age after the death of their husbands. Therefore, they were less able to work on the farm, and were thus particularly vulnerable to moving into poverty. All the descriptive data suggests that not only is the depletion of land likely to relate to moving households into poverty, but demographics are also an important factor that influences declining household fortunes. In addition, the findings from the qualitative interviews revealed that ill health is considered to be the most significant factor perceived by households as moving them into poverty. Households with seriously ill members who are old, especially those with old aged household heads, tended to move into poverty because of incurring medical bills and high transportation expenses that caused an additional financial burden. Meanwhile, the death of the household head and shocks related to natural disasters, such as flooding and drought, were next in order of importance.

The category of never poor had the highest value of asset holdings in both periods. These included average years of schooling, farm size, cultivated areas, irrigated areas, rice yields, agricultural assets, livestock and the amount of loans accessed. The demographic factors suggested that the never poor households owned the smallest household size and had the lowest dependency ratio compared to other groups. Both farm and non-farm sources of income made the same contribution to the overall household income for the never poor. However, a regional comparison revealed significant differences in the type of livelihood activities undertaken by never poor households. Farm income remained the predominant source of household income in the Central plain, accounting for 65 percent. This reflects that the success of the green revolution with the adoption of high-yielding rice varieties in generating higher cropping intensity is more pronounced in the Central region, where large scale farm areas have access to irrigation facilities. Agricultural cultivation undertaken by households in this region also provided employment for a considerable number of hired labourers, as well as requiring the use of modern technologies and inputs. In the Northeast, where most areas are less favourable production environments with rain-fed and drought conditions, households tended to focus their livelihood activities and

sources of income more on the non-agricultural sector, relying on farming activities solely for their own consumption. Non-farm income played a major role, accounting for more than 70 percent of the total household income. The key sources of the non-farm income of never poor households were mainly salaried employment, waged labour, and remittances.

8.2.2 Understanding the nature and key factors underlying poverty dynamics in general

Not only does this study provide the first empirical evidence of poverty dynamics in Thailand, it also adds to the body of literature on the nature and key factors that underlie poverty dynamics among rural households in general. As mentioned in Chapter 2, only a few studies of poverty dynamics in developing countries have been conducted in the past decades due to the scarcity of panel data, and even fewer empirical studies, particularly of long-term poverty dynamics. Many reviews of panel data studies of poverty dynamics in developing countries have shown that most surveys used in the research were undertaken over a period of less than five years (Lawson et al., 2003). Moreover, most of the few long-duration studies that exist particularly focus on the pathways out of poverty rather than the pathways into it (Dercon and Shapiro, 2007, Krishna, 2010b). This study provides further evidence of Thailand's poverty dynamics over a long-term period between 1988 and 2009, in order to understand the factors that contribute to the long-term process of households' welfare change.

The evidence in poverty dynamics literature suggests that it is necessary to know two main issues when seeking to understand the nature of poverty dynamics, namely the identification and explanation of poverty dynamics (Yaqub, 2000). Therefore, this study provides further evidence by identifying two key issues that correspond to the existing literature of poverty dynamics and the key research questions of this study: (i) The first is the pattern of poverty dynamics, or the identification of how many people experience each of the dynamic patterns, and (ii) The second is the determinants or key factors that explain poverty dynamics.

(1) Patterns of poverty dynamics

Accompanying Thailand's successful reduction of the poverty rate, the dynamic pattern of poverty showed further details of poverty changes over time. The results of the poverty dynamic pattern in Section 4.6 of Chapter 4, based on the survey, and people's self- assessment in Section 6.4 of Chapter 6 suggest a similar fashion, in which larger proportions of households moved out of poverty than those who moved into it. It is also evident that the proportion of households who moved into and out of poverty was higher than those who remained in chronic poverty. This finding is similar to the experience of poverty mobility patterns in other developing countries (Baulch and Hoddinott, 2000, Lawson et al., 2003, Dercon and Shapiro, 2007) as shown in Chapter 2 Section 2.2.2.

This study provides a further understanding of the dynamic patterns of poverty by looking at different geographical areas in two different regions. When considered by region, it is apparent that there are also important location differences in the pattern of poverty dynamics. The survey data suggests that the proportion of households remaining in chronic poverty in the Northeast, was higher than in the Central plain. This is in line with the overall poverty incidence rate, indicating that poverty incidence in the Northeast of Thailand is the highest compared with other regions. However, a larger proportion of households in the Northeast had escaped from poverty than in the Central plain, and this trend is in line with the overall picture of a greater decline in poverty incidence in the Northeast region compared to the Central region. Thus, the difference in poverty incidence between these two regions has declined.

In terms of villages' geographical location within each region, households in the rain-fed areas in both regions were found to be most likely to move out of poverty compared to other villages. This is because some poor farm households in the rain-fed areas in the Northeast region had managed to successfully adapt their livelihood activities from only depending on the agricultural sector to increasingly becoming engaged in high-return non-agricultural sectors. However, households that moved into poverty were mainly those in unfavourable areas like the rain-fed villages of the Central

region and the drought-prone village of the Northeast. Thus, these findings suggest that geographical areas are important in identifying different patterns of poverty.

(2) Key factors associated with poverty dynamics.

Overall, the findings from this study demonstrate that the key factors associated with the long-term mechanism of poverty dynamics comprise a combination of assets, lifecycle, crises, and behavioural factors, which mainly depend on (i) the initial level of assets, (ii) the ability of the household to accumulate assets, and (iii) the impact of crises or shocks. If poor households have an insufficient initial level of assets, especially education and cultivated land, this can limit their ability to accumulate additional assets, and thus, restrict them to participating in low-return, low-productive employment activities. In addition, the ill health or the death of an income earner can keep them in chronic poverty.

Households that manage to accumulate a considerable amount of assets, especially land, education and physical assets, have the ability to utilise those assets, as well as having greater opportunities to participate in higher income-generating occupational activities, which helps to open the pathway out of poverty. With sufficient assets and better opportunities, these households can move out of poverty and are able to successfully adapt their livelihood to enable them to cope with similar negative events that may affect chronically poor households. Meanwhile, non-poor households that move into poverty are likely to face vulnerability from a large depletion of assets, mainly cultivated land. The impact of an unfavourable harvest, either because of flooding or drought, is also likely to make non-poor households vulnerable, and thus move them into poverty.

It is apparent that households experience different poverty dynamics. They move into and out of poverty because of the different factors stated above, which leads them to make different responses. However, the experience, the moments of life events, as well as people's perception, could not be fully captured via a quantitative survey. There were other unobserved aspects that required another way of story-telling and self-assessment based on the in-depth interviews of the qualitative approach. This study also considered this important point and attempted to fill the gap by using a combination of quantitative

and qualitative approaches, and the contribution made by this combination of quantitative and qualitative to the study of poverty dynamics will be explained in the next section.

8.2.3 Combining quantitative and qualitative methods in the study of poverty dynamics

This study attempted to demonstrate the added value of using a mixed-method approach to understand the dynamics of poverty among rural households in Thailand, as well as to explore the implications of using two different approaches to study poverty dynamics.

The findings from this study served two key research objectives: (i) the first was to triangulate the findings from the quantitative approach with those from the qualitative approach, (ii) the second was to understand how qualitative life history interviews can help to enrich findings from the quantitative survey analysis. Two phases of the sequential integration of quantitative and qualitative methods for the same households at both the data collection and data analysis stages were adopted in this study to achieve these key objectives. To my knowledge, this is one of the first few studies to apply mixed methods by collecting its own panel dataset from the same household samples.

Firstly, the patterns of poverty dynamics were evaluated between income and self-perception measures. The main findings in Chapter 7 show that both approaches demonstrate a similar pattern of poverty dynamics in that substantial mobility was observed across four poverty categories. A higher proportion of households experienced poverty transitions, including moving into and out of poverty than those who remained in chronic poverty. Despite a strong positive relationship, there appeared to be a number of discrepancies in terms of the poverty level and poverty dynamics of the quantitative and qualitative approaches. These differences could be attributed to several plausible reasons, the first of which is that a self-assessment captures a broader concept of poverty than a quantitative income-based measure. It appears that a self-rated assessment, which is defined by people's evaluation of their own poverty status, captures a broader view of poverty and well-being that reflects a combination of a deficiency in necessities,

including money, assets, employment opportunities, social relationships, health and aspirations, while the quantitative measure only focuses on the single dimension of income. Secondly, the qualitative method does not explicitly account for household size when classifying poverty. The quantitative assessment was based on per capita income, while the qualitative assessment was based on the overall level of household income. Thirdly, recall errors or slight differences in the time period during which the quantitative survey was conducted and the retrospective interview period can explain the discrepancies. Income poverty was measured using a household survey conducted only in the two specific reference years of 1988 and 2009, while self-rated poverty was based on retrospective interviews over a decade of household events between 1988 and 2009. Fourthly, while income poverty was measured based on an absolute poverty basis, the self-rated poverty assessment was driven by relative poverty. Lastly, discrepancies between the two approaches could be the result of the close proximity of households' income to the poverty line.

Secondly, the case study of Thailand has provided evidence that combining both approaches complements each other and enables a better understanding of the relevant factors than using either approach separately. The estimated results from the quantitative analysis of the key determinants of each dynamic category of poverty in Chapter 5 provide a broad picture, and its multivariate nature enables many factors to be considered. However, it appears that the quantitative analysis was only successful in identifying factors associated with chronic poverty following the stronger statistical significance compared to poverty transitions. Only a few factors can be determined to be significant in poverty transitions. In addition, the quantitative analysis tended to omit several key factors, such as shocks, positive or negative behaviour and values, as well as some underlying processes that were likely to have impacted households' poverty status over the period, but which were unable to be observed from the survey questionnaires. The survey covered only two periods, therefore, the quantitative analysis were mainly based on two datasets, the initial level of key variables in 1988 and the level in 2009. However, self-rated assessment and life history interviews were based on retrospective interviews over a decade of household events between 1988 and 2009 which revealed several key events that were not appeared in the survey questionnaire. The findings from

the qualitative method in Chapter 6 added these key issues and provided additional insights, including contextual factors and the underlying processes that explained the poverty dynamics of each group. For example, the qualitative interview identified and supplemented the importance of working-age members' migration to changing household demographic compositions as another causal factor to explain why households remain in chronic poverty. In addition, the qualitative interviews that revealed people's perception also included positive behaviour and the value of being content with sufficient, thrifty in spending money and working hard as another key factor associated with moving out of poverty. Meanwhile, the life history interviews of those moving into poverty also provided additional insights in the context of people's lives. Apart from the structural or asset factors and lifecycle factors, risk and crises also played an important role in how people perceived their households had been moved into poverty. A more disaggregated breakdown showed the importance of illness as the most important factor, while the death of the household head and shocks related to natural disasters, such as floods and drought, came next in order of importance. According to the interviews, social norms of misbehaviour, such as excessive alcohol drinking, smoking and addiction to gambling were also identified as key factors of moving into poverty.

Overall, the findings from this study demonstrate that using a mixed-method approach can help to explain poverty dynamics at the household level rather than only the patterns of households' income poverty changes. It can also provide insights in terms of understanding the broader concepts of poverty, poor people's priorities, and the contextual factors that underlie the dynamics of poverty, as perceived by local people, which cannot be captured by a panel survey.

It is well recognised that poverty has complex and multidimensional concepts, and the discrepancies between the poverty levels and poverty dynamics of the quantitative and qualitative approaches imply that no single approach can capture all the dimensions of poverty. Each approach should be used according to its strength for different research purposes. Thus, it is important to combine both approaches to understand and fully capture the different facets of poverty. This study demonstrates that there is considerable value added in using a combination of quantitative and qualitative

approaches to understand the dynamics of poverty. A combination of methods can overcome the biases and weaknesses encountered when only one approach is used and can lead to the formation of more well-targeted and effective policies on poverty reduction. In particular, combining the perception or the voices of local people with statistical survey data can help assert their priorities and realities into the policy arena while simultaneously showing up which aspects of poverty neglected to be addressed.

8.3 Policy implications and policy recommendations

Having presented all the main findings from this study in the previous section, it is important to illustrate how these findings could contribute to policy implications. If the overall poverty is to be reduced, it is critical for policy-makers to have a broader understanding of the natural flows of poverty, such as who moves into, who moves out of and who stays in poverty, and the key factors that underlie this dynamic process. Not only does the poverty alleviation policy need to focus on resolving the problem of the existing poor, but similar attention should also be paid to preventing non-poor households that tend to be vulnerable from moving into poverty in the future. It is essential to understand the key determinants associated with poverty dynamics, which have implications for a poverty alleviation policy, and these will be discussed in this section.

This study has explored the patterns and key factors that have underlain poverty dynamics in rural Thailand over the past two decades. Using a combination of quantitative and qualitative approaches has provided a broader understanding of the key determinants associated with poverty dynamics by focusing on two dimensions, namely, income poverty based on a household panel survey, and self-rated poverty based on local people's perception. The key findings from the study suggest that each type of poverty has different determinants and thus, different implications for a poverty alleviation policy. Therefore, there is a need for appropriate policies to target different types of poverty dynamics (McCulloch and Baulch, 2000, Barrett, 2005a, Krishna, 2010a). The study suggests that policies for those experiencing transitory poverty should be distinguished from those for chronically poor households. Also, policies for moving

poor households out of poverty should also be distinguished from those preventing non-poor households from moving into poverty.

Many studies state that policies to prevent the descent into poverty need to be distinguished from those that augment the escape from poverty (Sen, 2003, Barrett, 2005a, Krishna, 2010a). Krishna (2010a) emphasises that the future efforts to assist poverty reduction must consist of a two-pronged strategy, including a set of policies to *'enhance the opportunity'* for poor households to escape from poverty and another set of preventive policies for *'protecting'* non-poor households against the damage caused by negative events that could possibly lead them into poverty. Therefore, the implications derived from this poverty dynamics study prioritise two key policies: (i) policies to enable households to move out of poverty and (ii) policies to prevent households from moving into poverty.

(1) Policies for enabling households to move out of poverty

The quantitative and qualitative findings identified non-farm employment and asset accumulation, specifically land and education, as being the most important factors that influence a move out of poverty. Therefore, these key findings lead to recommending that policies to enable households to escape from poverty deal more with structural factors that help to build up and sustain household assets and income. Three key policies must be prioritised to help households to move out of poverty, namely (i) the creation of non-farm employment in rural areas, (ii) the improvement of academic and vocational education, and (iii) investment in agricultural research and the development of an irrigation system.

Firstly, this study suggests that those moving out of poverty should diversify their income source into non-agricultural activities, particularly regular salaried employment. Therefore, the government needs to put more emphasis on the creation of non-farm employment by promoting the establishment of small enterprises in rural areas. This will create new employment opportunities for the poor in rural areas and help them to earn additional income rather than primarily relying on the agricultural sector and seasonal low-waged labour. Creating employment opportunities in rural areas will also help to mitigate the impact of the increased out-migration of young working

members to Bangkok and other big cities. Small rural enterprises should be developed on the basis of rural resource-based industries (e.g. manufacturing, agribusiness, trade, services), including rural craft activities based on the available resources in each area. The central government should collaborate with local governments to provide assistance in terms of access to credit, skill and technological development, entrepreneurship training, and marketing support these rural non-farm enterprises. A rural development policy has been included in Thailand's national development strategy since the Fifth Plan (1982-1986). This policy emphasises the development of regional cities, with the aim of diversifying economic activities from the capital city, Bangkok, to other cities and rural areas, and one of the key objectives of the policy is to develop small-scale industries and rural enterprises by establishing new economic and industrial areas. However, such a policy seems to focus more on the promotion of urban-based industrial development, which appears to only provide the potential to rectify regional income inequalities rather than urban-rural inequalities. It has not achieved its goal for the rural areas, since the industrial development still remains clustered around Bangkok and the vicinity and large urban cities nearby (Parnwell and Khamanarong, 1990, Panpiemras, 1988, Pansuwan, 2010). One of the key reasons for this is the proximity to the capital city and good infrastructure development that helps to provide much better access to market. Despite successful industrial sector development, Thailand still puts less emphasis on the dispersion of industries to rural areas. Recent data released by Office of Small and Medium Enterprises Promotion suggests that the creation of small businesses outside the capital city, Bangkok, is limited. In 2011, 2.6 million Baht or 25 percent of GDP was generated by small enterprises, while the remainder was generated by medium and large enterprises, and while small enterprises employ about 10 million people, almost 30 percent of them are concentrated in Bangkok and the surrounding vicinity (OSMEP, 2012).

Secondly, the findings also indicate that education has a strong causal influence on a household's poverty status. It is apparent that the education of working members has a significantly positive influence on moving households out of poverty. This is due to the fact that higher education can help to provide opportunities for rural households to increasingly become involved in high-return non-farm employment. Therefore, the

provision of education for poor households is one of the key recommended policies for poverty reduction.

Thailand has been successful in extending the compulsory educational level[62] which has considerably improved the attainment of education for the Thai people. The government enacted a new educational reform policy in 1997 to provide access to education to all Thais, especially those in rural areas, by upgrading rural primary schools to become lower secondary schools. In 1999, under the new National Education Bill, the government provided twelve years of free basic education, extending from the lower secondary school level to cover the upper secondary level, while compulsory education for all Thai people was extended from six to nine years' free education, from primary level to lower secondary level. In 2009, the government also implemented a 15-year free education policy from kindergarten to secondary school level. Nevertheless, people in the rural areas have limited access to upper secondary school, and if they want to pursue their studies, rural students need to commute to the city, which incurs a great amount of expenditure, not only on high tuition fees but also transportation and the general cost of living. Thus, after finishing primary school or the lower secondary level, many young rural household members increasingly tend to migrate to find more lucrative jobs in Bangkok and the urban areas, while those who remain in rural areas only receive less than lower secondary on average. This suggests that there is still room for educational improvement, especially in rural areas.

The education policy in Thailand should give priority to improving the general and vocational educational system in the rural areas, both in terms of quantity and

[62] Thailand's formal educational system can be classified into two main programmes; general and vocational. The formal system consists of at least nine years of compulsory education and twelve years of basic education. A free basic education of twelve years is guaranteed by the constitution, and a minimum of nine years' school attendance is mandatory. The nine years of compulsory education is divided into six years of primary education, three years at lower secondary level and another three years at upper secondary level. After completing the lower secondary level, which is compulsory education, students can decide to pursue their study in vocational programmes. Two levels of the programmes are offered. Firstly, the three-year certificate level, known as the Certificate in Vocational Education (Por Wor Sor), for skilled workers to which students are admitted after completing lower secondary school. Secondly, the two-year diploma technician level, called the Technical Diploma in Vocational Education (Por Wor Chor), for students who graduated with a Certificate in Vocational Education or after the upper secondary level of general programmes. For tertiary and higher education, students can obtain an associate degree, a four to six-year bachelor's degree, and a two to five-year postgraduate degree. Around 60 percent of the total 14 million students currently pursue the general education programme.

quality. Vocational education programmes are specifically considered to be an important alternative for poor rural students to adopt more practical skills, since most of these programmes are devoted to on-the-job training. This provides more opportunities for poor rural children, who do not want to continue their academic study in the general programme but decide to enter the workforce after lower secondary school to develop vocational skills in order to earn an income to support their families. Since the labour market is becoming more specialised and requires higher levels of skill, the government should provide more support and subsidies to improve the quality of vocational schools in rural areas. This will also generate a supply of skilled labour to support the potential demand for newly-established small enterprises in the non-farm sector. The further provision of public and private scholarships or the waiver of tuition fees for poor students is also strongly recommended.

Thirdly, despite the increased significance of non-farm employment as the main income source, the agricultural sector still remains the major occupation of rural households especially those in the Central region. One of the key factors for moving out of poverty is an increase in rice yields and irrigated areas. Therefore, investment in high-yielding varieties and irrigation systems becomes one of key policies to move people out of poverty. This policy should also give priority to investing in the research and development of new technology for growing rice, as well as an improved irrigation system, specifically in unfavourable areas, in order to increase farm productivity and maintain the quality of rice, especially for chronically poor households that are most likely to be found in these areas. In addition, the government also needs to consolidate and allocate land for landless poor households to help them to make a living on their farm.

(2) Policies for preventing households from moving into poverty

The results of this study showed that almost 10 percent of the total households who were not poor in the past have become poor today, and they became poor because of a particular set of events. The key factors that move households into poverty include a change in demographics and unanticipated negative events, namely illness, the death of the household head, and natural disasters. Therefore, not only is a set of policies required to help to accelerate people's escape from poverty; poverty policies also need

to include preventive assistance with the aim of preventing non-poor and transitory poor households from moving into poverty in the future. The findings of the factors associated with moving into poverty underscore the importance of preventive policies or safety nets. Policies that respond to preventing households from moving into poverty need to contain interventions that help to prevent or reduce vulnerability from critical negative events or shocks, as well as growing challenges from the changing demographics of the household. There should be different forms of targeted social safety nets and social protection to assist vulnerable elderly household members who have been left alone by their children or are experiencing ill health, as well as disabled people.

There is a growing consensus among various development agencies that social protection schemes constitute key strategies for reducing and preventing poverty and vulnerability in developing countries (Barrientos and Hulme, 2008, Cook, 2009, Barrientos, 2010). The issues of social safety nets and social protection have emerged in Thailand, as well as other South East Asian countries, since the financial crisis in 1997. Social protection in Thailand is a multi-pillar system, which can be categorised into two programmes, namely, a contributory transfer programme (e.g. social insurance or social security and employment-based programmes for private employees and government pension funds) and a non-contributory transfer programme, which comprises a set of instruments by which the government transfers non-contributory benefits to vulnerable groups (e.g. social assistance or welfare provision consisting of a universal healthcare scheme and a monthly allowance for the elderly) (Paitoonpong et al., 2010).

In terms of the contributory transfer programme, the social security scheme in Thailand also experiences problems of coverage, inadequate benefits, and lack of financial stability and management (Paitoonpong et al., 2010). The scheme only covers private employees, but it does not cover a number of workers in the informal sector and farmers, who account for the majority of the labour force in Thailand. Data from a labour survey conducted by Thailand's National Statistic Office reveals that, in 2009, about 21.8 million or 60 percent of the total 35.5 million labour force of the country were working in the informal sector. Most of these were farmers who mainly resided in the Northeast region. These people in the informal sector generally have low and unsecured income, so that they are unable to save and sometimes fall into debt. They

also tend to become vulnerable to any negative events or shocks, such as old age, illness, accidents, and natural disasters. It is also likely that informally-employed people have less concern about saving for their old age compared to those in the formal sector (NESDB, 2009c). Workers in the formal sector who earn a more stable and higher income tend to have various forms of post-retirement security and are able to save more than the workers in the informal sector. Informal workers, especially in rural areas, generally save with informal established groups in the villages, namely saving groups, funeral associations, farmer groups and housewife groups. However, these types of savings only have a very small return and are normally used for the household's living rather than for their own retirement. For example, the funeral associations require each household to pay 20 Baht per person when anyone in the group dies. They collect all the money and give it back to the families when a member dies. It is apparent from such evidence that, without adequate savings, these informal workers can find it difficult to access funding when they retire or when they are too old to work, which can lead them to move into poverty.

In recent years, the government has attempted to resolve this problem by using a non-contributory transfer programme, namely a monthly allowance for all elderly Thais who do not receive any other form of social security or public assistance. However, the amount of the allowance (500 baht per person per month) is insufficient for individuals to live on (Boonyarattanasoontorn, 2007). Moreover, there are also some concerns about the future government budget being burdened with the increasing demographic challenge of an ageing population in Thailand (NESDB, 2009a).

Therefore, to ensure that all elderly citizens have sustainable income security when they retire, the government needs to consider the improvement of the contributory transfer programme. The recommended policies include extending the social security scheme to cover elderly and disabled people in the informal sector by establishing a pension fund or retirement fund, specifically for farmers and workers in the informal sector. This policy has been discussed and proposed by the Ministry of Finance and Suwanrada and Chandoevwit (2009) under The National Pension Fund (NPF), also known as the National Saving Fund. The scheme aims to extend the coverage of a pension and benefits to all Thai people, including workers in the informal sector, as well

as farmers and workers in the agricultural sector. The National Pension Fund is a voluntary programme, whereby individuals can choose to save some part of their income in order to ensure that they will have sufficient savings to support them when they retire. Under this programme, the government also provides a supplementary contribution to the fund; for example, if an individual saves 100 baht per month, the government would pay an additional 50 baht per month to his/ her account. Individuals would be entitled to receive a pension at the retirement age of 60. In addition, the programme also provides assistance for people who may become disabled as a result of an accident or illness and are unable to pay money into the fund. In this case, the government may also consider paying for them. This study also strongly supports the general concept of a National Pension Fund. However, in order to provide assistance for those who are likely to be most vulnerable to moving into poverty, it encourages the initial implementation of the programme by establishing a National Pension Fund or National Retirement Fund specifically for farmers, since they are the most vulnerable group. In order to help to prevent households from moving into poverty, it is essential to extend the social protection scheme by improving the coverage of the programme benefits, particularly to the most vulnerable group of people, as well as developing the technical and administrative capacity for an effective implementation and evaluation process.

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APPENDIX

Appendix 1: Basic information of Khon Kaen and Suphan Buri

	Khon Kaen			Suphanburi		
	1988	**2009**		**1988**	**2009**	
Population	1,623,000	1,883,000		800,000	892,000	
Gross provincial products (million baht)	20,516	143,806		14,473	67,472	
GPP per capita (baht)	12,640	76,385		18,091	75,622	
Poverty incidence (%)	na	5.6		na	9.1	
Total area (Mil rai)	6.8	6.8		3.3	3.3	
Agricultural area (Mil rai) (% to total area)	4.01 (60%)	4.15 (61%)		2.24 (67%)	2.07 (62%)	
Rice growing area (Mil rai) (% to total agricultural area)	2.66 (65%)	2.72 (66%)		1.46 (65%)	1.16 (56%)	
Administrative division		26 Districts (Amphur) 198 Sub-districts (Tambon) 2,330 Villages (Muuban)			10 Districts (Amphur) 110 Sub-districts (Tambon) 1,007 Villages (Muuban)	
Districts	Muang (KK1)	Muang (KK2)	Nongrua (KK3)	Sriprajan (SP1)	Donjedi (SP2)	Banprama (SP3)
	17 Sub-districts 282 Villages 219,821 population	17 Sub-districts 282 Villages 219,821 population	10 Sub-districts 149 Villages 96,956 population	9 Sub-districts 64 Villages 58,143 population	5 Sub-districts 48 Villages 46,863 population	14 Sub-districts 127 Villages 84,848 population

Source: Office of the National Economic and Social Development Board
Office of Agricultural Economics, Ministry of Agriculture
Department of Provincial Administration, Ministry of Interior

Province	**District (Amphur)**	**Sub-district (Tambon)**	**Village (Muuban)**	**Village's Population**	**Number of Households in village**
Khon Kaen	Muang	Koaksi	Ban Koak	9,180	1,778
	Muang	Samran	Ban Kaina	9,309	2,445
	Nongrua	Ban Meng	Ban Meng	11,797	2,553
Suphanburi	Sriprajan	Wang yang	Ban Wang yang	6,978	2,025
	Donjedi	Sakachome	Sakachome	6,120	1,714
	Bangprama	Jorakhaeyai	Jorakhaeyai	5,152	1,025

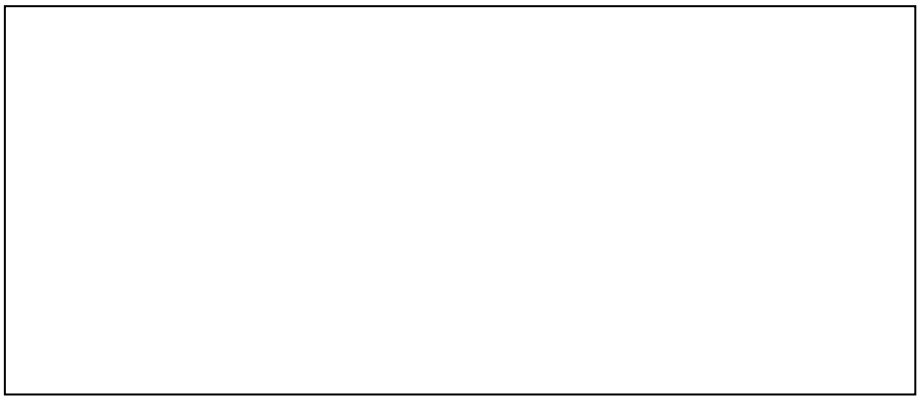
Source: Department of Provincial Administration, Ministry of Interior

Appendix 2: Sample of research questionnaire

Village's name……..Province……
Address……
Household head's name…….
Respondent's name……
Date……..

Part I: Household characteristics

1.1 Family structure



1.2 Family members

No.	Name	Relation ship to HH head	Sex	Age	Marital status	Education level	Occupation		Year lived in	
							Primary	Secondary	1987	2009
1										
2										
3										
4										
5										

1.3 Occupations

No.	Name	Previous occupations				Current occupation			
		Type	Place	Years	Income/ year	Type	Place	Years	Income /year
1									
2									
3									
4									
5									

Part II: Key household assets (land/ machinery)

2.1 Landholdings

Total owned land……. Lands/ …….Rai
Cultivated land…….Lands/ …….Rai

No. of land	Area (Rai)	Irrigation source	Holding type	Land owned	Leasehold type	
				Value if sale	Land rent payment	Output allocated for landlord
					(baht/rai)	Value
1.						
2.						
3.						
4.						
5.						

2.2 Rented out land

Land No.	Area (Rai)	Irrigation source	Holding type	Received rent (baht/rai)	Received output from leaseholder
					Value
1.					
2.					
3.					
4.					
5.					

2.3 Land use

- Can you describe how your land has been used?

Land No.	Cultivated area	2009								2010									
	(Rai)	Wet season (major rice/ other crops)								Dry season (second rice/ other crops/ fallow)									
		Cultivating						Harvesting		Cultivating		Harvesting							
		May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
1.																			
2.																			
3.																			
4.																			
5.																			

- What are your cropping patterns for the whole year?

(Rice-rice/ Rice-fallow/ Rice-other crops/ Other crops)

2.4 Machines

Type	Quantity	Value	Fixing cost
		baht	Baht/year
Tractor			
Power tiller			
Water pumper			
Thresher			
Pick-up/truck			
Automobile			
Motorcycle			
Bicycle			
Others			

Part III: Household income

3.1 Farm income (rice and non-rice income)

3.1.1 Rice production revenue:

- Total production and distribution pattern

Year	Major rice (kg.)	Second rice (kg.)
Total production		
- For sale		
- Own consumption		
- Others (eg. Reserve for seeding, give for farm owners)		

- Total sale

	Major rice			Second rice		
	Quantity (kg.)	Price (baht/kg.)	To whom	Quantity (kg.)	Price (baht/kg.)	To whom
Total sale						

3.1.2 Rice production cost (Labor, machine, input used (seeds, chemical, gasoline), land rent)

- Labors and machinery cost

Activities	Family labors			Hired labors					Machinery					
							Wage							
	No.	Hr. /day	Days	No.	Hr. /day	Days	Baht/day	Total	Type	Days	Own machine (Fuel cost)	Rental cost	Hiring cost	Total cost
Transplanting														
1)														
2)														
Broadcasting														
1)														
2)														
3)														

- Input

Inputs	Major rice			Second rice		
	Quantity (kg.)	Price (baht/kg.)	Value (baht)	Quantity (kg.)	Price (baht/kg.)	Value (baht)
1) Seeds						
2) Fertilizer						
3) Chemical						

3.1.3 Income from other sale crops and livestock

	Number of HH members working	Revenue			Cost						Net income
		Quantity	Price	Value	Purchased Seeds	Labor cost			Fertilisers	Total cost	
						Plowing	Planting	Harvesting			
Farm crops											
Vegetable											
Fruits											
Livestock											

3.1.4 Problems regarding rice/ crop cultivation and marketing (please specify if any)

Example of problems	Major rice farming		Second rice farming		Other crops	
	Yes	No	Yes	No	Yes	No
Cultivation						
- Soil condition						
- Seeds (price/ quality)						
- Fertiliser						
- Pesticide/chemical						
- Labor						
- Disease						
- Water supply						
- Weather condition						
Market						
- Price						
- Transport						
- Middleman						

Describe……
……
……

3.2 Non-farm income

3.2.1 Wage or salary (regular earnings)

Occupation type	HH member (indicate who)	Income (Baht/month)	Months/ year	Total income per year (baht)
1. Agricultural wage labor				
2. Private companies/factories				
3. Government				
4. Construction				
5. Services				
6. Others				

3.2.2 Self-employed (entrepreneur earnings)

Activities	HH member (indicate who)	Income (Baht/month)	Months per year	Total income per year

3.2.3 Remittances

Name	Relationship to HH head	Sex	Age	Marital status	Education level	Current place	Occupation	Value	
								Cash (baht)	Goods (baht)
1									
2									
3									
4									
5									

3.2.4 Other sources of income (please indicate if any e.g. dowries, pension, and bequest)

……
……

3.3 Problems or shocks

Please specify any major problems or shocks occurring during the past twenty years that you think they have adversely affected your household income.

……
……
……
……
……
……

Part II: Overall perception on poverty

- What do you think 'poverty' means?

  ……
  ……
  ……
  ……

- Can you describe more on what are the characteristics of poor, medium and rich households?

  ……
  ……
  ……
  ……

- In your view, do you think your household belong to which group?

  □Very rich □Rich □Neither rich nor poor □Poor □Very poor

- Compared to twenty three years ago, how do you say about your household's poverty status?

  □Better □No change □Worse

Appendix 3: Key socio-economic characteristics of sample households by village

	Central						Northeast					
	Irrigated		Rain fed		Flood prone		Irrigated		Rain fed		Drought prone	
	1988	2009	1988	2009	1988	2009	1988	2009	1988	2009	1988	2009
Household head age	51.4	56.6	53.7	60.6	61.8	69.3	52.1	63.3	50.8	62.0	50.1	63.1
Female head (%)	10.8	29.7	10.0	40.0	20.0	40.0	10.4	39.6	19.6	37.0	15.4	23.1
Household size	4.9	3.2	5.2	4.2	4.7	4.8	5.8	4.6	5.4	5.2	5.0	4.6
Dependency ratio	42.4	54.3	57.9	58.9	47.6	60.4	64.4	74.8	35.0	74.5	47.5	77.2
Education of household head	3.6	5.1	2.3	3.7	3.6	4.3	4.0	5.0	4.0	4.4	4.0	4.9
Education of working aged members	4.6	6.6	3.3	5.7	5.3	6.7	4.5	8.0	4.9	8.2	4.8	6.9
Share (% working members)												
Not completed primary	4.1	5.4	18.2	2.5	2.2	0.0	4.4	0.0	1.8	0.0	16.2	0.0
Primary school	89.2	48.0	81.2	56.6	75.2	44.7	88.6	53.1	86.8	41.6	79.6	50.1
Lower secondary school	3.0	11.9	0.3	20.5	10.9	19.5	5.0	13.4	8.9	25.0	21.0	13.9
Upper secondary school[1]	1.8	11.3	0.3	4.8	6.4	6.7	2.0	18.0	2.5	12.4	2.1	11.5
College/university[2]	1.9	13.5	0.0	3.1	5.3	12.8	0.0	13.4	0.0	13.6	0.0	7.5
Farm size (ha)	3.1	3.7	8.1	5.2	7.1	7.9	1.8	1.1	2.7	1.6	2.9	1.8
Cultivated area (ha)	5.2	7.3	6.8	4.3	9.2	16.8	2.7	2.0	1.8	1.8	2.8	1.6
Irrigated land (% total area) [3]	85.4	86.5	0.0	14.3	68.7	97.9	82.6	73.7	0.0	33.8	0.0	4.0
Rice yield (ton/ha)	3.9	4.3	1.4	1.0	2.4	3.0	2.9	3.6	1.8	2.2	1.5	1.7
Tenure type (% of area) [3]												
Land-owned	66	70	89	62	58	62	92	90	100	89	76	77
Leasehold tenancy (fixed-rent)	34	26	1	36	42	38	7	3	0	10	1	18
Sharecropping tenancy	0	4	10	2	0	0	1	7	0	1	23	5
Agricultural asset value[4] (1,000 Baht)	61.0	32.0	52.0	18.9	46.0	84.0	30.4	41.0	12.1	25.0	0.2	13.8
Non-agricultural asset value[5] (1,000 Baht)	14.9	30.5	12.5	22.8	16.4	25.5	19.8	32.8	23.3	30.8	16.0	24.5

Note:

[1]Include Certificate of Vocational Education (Por Wor Chor**)**

[2]Include Technical Diploma in Vocational Education (Por Wor Sor)

[3]Average only farm households

[4] Agricultural asset include power tiller, centrifugal pump, pesticide spray machine, four-wheeled tiller and thresher

[5] Non-agricultural asset include pick up car, motorcycle and bicycle

Appendix 4: Source of household income by village

	Central						Northeast					
	Irrigated		Rain fed		Flood prone		Irrigated		Rain fed		Drought prone	
	1988	2009	1988	2009	1988	2009	1988	2009	1988	2009	1988	2009
Composition (%)												
1. Farm income	97.7	67.4	93.9	41.7	88.2	67.6	73.3	33.3	65.1	15.5	75.4	15.9
1.1 Rice	65.0	27.0	73.5	4.1	81.8	47.4	64.2	19.8	45.6	10.4	50.0	6.7
1.2 Non-rice and livestock	25.6	29.1	10.9	28.7	5.2	7.3	6.6	1.7	17.6	3.9	6.4	5.6
1.3 Agricultural wage	4.4	11.3	9.5	9.0	1.2	7.8	2.4	8.9	1.9	0.7	19.1	3.4
1.4 Rental and earning interest	2.7	0.0	0.0	0.0	0.0	5.1	0.0	2.8	0.0	0.6	0.0	0.1
2. Non-farm income	2.3	32.6	6.1	58.3	11.8	32.4	26.7	66.7	34.9	84.5	24.6	84.1
2.1 Non-agricultural wage	0.2	3.3	1.5	8.1	0.5	0.6	12.6	16.0	31.3	25.3	20.6	12.0
2.2 Regular salary	1.5	13.4	0.0	25.6	4.1	17.0	6.5	25.5	0.0	40.4	0.0	35.2
2.3 Self-employment	0.2	11.1	3.2	15.8	3.1	5.7	2.4	8.8	0.0	3.2	0.0	15.5
2.4 Remittances	0.4	3.6	1.5	6.5	4.1	6.9	4.4	8.3	3.6	12.0	4.0	18.0
2.5 Others[1]	0.0	1.2	0.0	2.2	0.0	2.2	0.0	8.1	0.0	3.5	0.0	3.6
Current household income (Baht)	108,660	429,278	45,288	249,551	67,940	366,091	34,240	208,084	21,597	181,654	25,296	176,814
Real household income (Baht)[2]	277,146	429,278	115,510	249,551	173,287	366,091	98,083	208,084	61,865	181,654	72,461	176,814
Per capita income (Baht)	58,728	140,205	24,261	66,504	38,464	101,022	18,606	47,115	11,931	39,933	19,508	41,286
Real household income (US$)[3]	2,282	12,504	943	7,269	1,494	10,664	723	6,061	464	5,291	758	5,150

Note:

[1] Others include monthly allowance granted for elderly, disabled people in rural areas (500 Baht per person), started in 2007.

[2] Average household income in real term inflated by rural consumer price index in 2009

[3] Exchange rate in 1988 1US$ = 25.7Thai Baht in 2009 1US$ = 34.3 Thai Baht

Appendix 5: Poverty index by village

	Central						Northeast					
	Irrigated		Rain fed		Flood prone		Irrigated		Rain fed		Drought prone	
	1988	2009	1988	2009	1988	2009	1988	2009	1988	2009	1988	2009
Poverty headcount	12.7	8.1	42.5	10.0	50.0	16.7	66.6	18.8	76.1	19.6	61.5	25.6
Poverty gap	5.0	3.4	13.7	3.9	16.5	5.4	22.1	6.8	41.0	7.1	22.9	11.4
Poverty severity	2.3	1.9	5.7	1.7	7.6	2.3	10.8	2.9	24.4	3.6	10.3	6.8

Note:
Using Thailand's official poverty line released by Office of the National Economic and Social Development Board (NESDB)

Appendix 6: Poverty dynamics by village

	Central			Northeast		
	Irrigated	Rain fed	Flood prone	Irrigated	Rain fed	Drought prone
Chronic poor (Poor 1988 and 2009)	0.0	5.0	13.3	12.5	17.4	7.7
Moving out of poverty (Poor 1988 and Non-poor 2009)	10.8	37.5	36.7	54.2	58.7	53.8
Moving into poverty (Non-poor 1988 and poor 2009)	6.0	10.0	3.3	6.3	6.5	17.9
Never poor (Non-poor 1988 and 2009)	83.2	47.5	46.7	27.1	17.4	20.5

Appendix 7: Descriptive statistics for key variables used in regression analysis

Variables	Mean	Std.dev
Log per capita income 1988	4.28	0.35
Log per capita income 2009	4.65	0.42
Household head age	52.88	12.84
Female head (%)	0.14	0.35
Household size	49.43	52.25
Dependency ratio	5.20	1.75
Education of household head	3.62	1.64
Education of working aged members	0.37	0.62
Share (% working members)		
Not completed primary	0.36	0.70
Primary school	3.20	1.71
Lower secondary school	0.21	0.52
Upper secondary school	0.09	0.32
Farm size (ha)	0.46	0.38
Cultivated area (ha)	0.49	0.37
Irrigated land (% total area)	0.25	0.37
Rice yield (ton/ha)	2.32	1.26
Agricultural asset value	1.80	1.96
Non-agricultural asset value	1.61	2.12
Change in number of children	-0.01	1.66
Change in number of elderly	0.25	0.72
Number of observations	240	